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[VOL. XXXVIII.] **[No. 83.]** **THE**

MEDICO-CHIRURGICAL
REVIEW,
AND
JOURNAL OF PRACTICAL MEDICINE.
(QUARTERLY.)

ARRANGEMENT.

- I.—Extensive Analytical Reviews of English and Foreign Medical Works.
- II.—Quarterly Periscope of Practical Medicine; or, Spirit of the Medical Journals, Foreign and Domestic.
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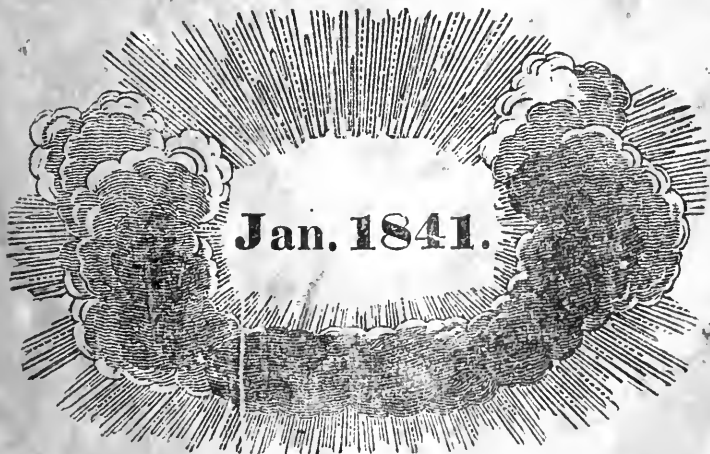
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MEDICAL DEPARTMENT.

No. _____

Presented by _____

Bence Jones

A practical Work on the Disce



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OF THE

MEDICO-CHIRURGICAL REVIEW,

No. LXVII. JANUARY 1, 1841,

[BEING No. XXVII. OF A DECENNIAL SERIES.]

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THE

Medico-Chirurgical Review,

No. LXVII.

[NO. 27 OF A DECENNIAL SERIES.]

OCTOBER 1, 1840, to JANUARY 1, 1841.

MEDICO-CHIRURGICAL TRANSACTIONS, Published by the Royal Medical and Chirurgical Society of London. Vol. XXIII. London: Longman & Co. 1840.

THIS admirable Society is increasing in extent and honour, and, certainly, not retrograding in usefulness. All other societies, in this Kingdom, may own without a blush its superiority, and its European reputation is of a high order. To be a member of it, is courted as a distinction, and to be a contributor to its Transactions is a guarantee of merit.

The present volume of those transactions is of a character very similar to that of its predecessors. The same variety, the same preponderating practical tone which distinguished them, pervade it, and render the task of disseminating its contents among the less opulent members of the profession and those whose lot has placed them in our Colonies or on the ocean, one of equal pleasure and profit. And the members of the Society must themselves feel gratification at every thing which widens the sphere of their utility, and makes them more known to the world.

The contents of the work are as follows:

1. Case of strangulated hernia, in which the bowel was ruptured by the patient in his efforts to reduce it; by Benjamin Travers.—2. Observations on the blood-corpuscles and pus-globules in certain animals; by George Gulliver.—3. On white spots on the surface of the heart, and on the frequency of pericarditis; by James Paget.—4. Remarks on emphysema of the lungs; by George Budd, M. D.—5. On a remarkable effect on the human gums, produced by the absorption of lead; by Henry Burton, M. D.—6. A case of disease in the posterior columns of the spinal cord; by Edward Stanley.—7. On the arrangement of the intermediate vessels on surfaces secreting pus, with a note regarding the vascularity of inter-articular cartilages; by Robert Liston.—8. Remarks on the diagnosis of foreign bodies in the larynx; by Cesar H. Hawkins.—9. History of a case in which the operation of tracheotomy was performed, with observations; by Benjamin Travers.—10. Second Memoir on some principles of the pathology of the nervous system; by Marshall Hall, M. D.—11. Third Memoir on the same subject; by the same author.—12. On the presence of sulphur in cystic oxyde, and an account of a cystic oxyde calculus; by Henry Bence Jones.—13. Case of large osseous tumour of the uterus; by James M. Arnott.—14. On the rapid organization of lymph in cachexia; by John Dalrymple.—15. A case of recovery from cut throat, in which both the larynx and pharynx were extensively

opened; by R. A. Stafford.—16. On the structure of the human placenta and its connexion with the uterus; by William Bloxam.—17. Termination of the case of William Chandler, afflicted with dry gangrene, of which an account was published in the twenty-second volume of the Transactions, by S. Solly.—18. Observations on injuries of joints, and their treatment; by Rutherford Alcock.—19. On aneurisms, and especially spontaneous varicose aneurisms of the ascending aorta, and sinuses of Valsalva, with cases; by John Thurnam.—20. Case of a rare species of hydatid, the *echinococcus hominis*, found in the human liver; by T. B. Curling.—21. Observations on the mode of union of fractured bones; by R. H. Meade.—22. Case of aneurism of the arteria innominata, in which the carotid and subclavian arteries were tied; by W. Wickham.—23. Case of tumour in the pelvis, impeding parturition; by J. C. W. Lever.

We shall take the Papers as they come, and notice them seriatim.

I. A CASE OF STRANGULATED HERNIA, IN WHICH THE BOWEL WAS RUPTURED BY THE PATIENT IN HIS EFFORTS TO REDUCE IT. By BENJAMIN TRAVERS, Esq. F. R. S.

Mr. Travers is an old and valued contributor. The succeeding case is very interesting.

At 3, a.m. Oct. 29, 1839, Mr. T. was summoned to see a young gentleman, aged 20, supposed to be suffering from strangulated hernia.

Mr. T. found him lying on his back, with a countenance expressive of great suffering and anxiety, his surface pale and chilled, eyes and lips livid, legs drawn upwards, pulse at the wrist imperceptible, and the heart's action rapid and indistinct. He had vomited several times, but had passed a motion at four in the afternoon of the preceding day. The scrotum was enlarged to the size of a young child's head, and discoloured of a gangrenous hue; the skin distended as if about to burst. The hypogastrium was swollen and tense, the pain acute, diffused and much increased on pressure.

It appeared that he had recently laboured under gonorrhœa and swelled testicle on the right side, and that he had been the subject of hernia on the same side, from his birth; that he had not worn a truss since his childhood, but was in the habit of lying down and replacing the protruded bowel with his hands, when inconveniently distended in the sac. At six o'clock of the preceding evening the volume of the tumour became so increased, as to oppose a resistance to its return, which the young man could not overcome. In addition to continued violent manipulation, he compressed it forcibly between his hands and thighs, and as if reckless from ill success, actually made a section of the integument with a razor, transverse to the chord. At midnight he sent for his father, and told him he had burst his testicle, or that something had given way, and if unassisted, he must die. The bulk of the swelling had gone on increasing, from this time, to the period at which Mr. Travers visited him.

Mr. Travers gave him some warm brandy and water to drink, which restored a very slender pulse, and then made an incision in the tract of the spermatic chord, towards the fundus of the tumour. The subcutaneous cel-

lular membrane was throughout infiltrated with a dark-coloured fluid, emitting a feculent odour, and freely oozing from the section. The subjacent cremaster tunic was then divided, and the collapsed sac, forming an enormous pouch, divided, and incised on a director: the testis lay exposed and somewhat swollen in its lower part, and a flaccid fold of bowel occupied the mouth of the sac, which on handling the parts, slipped into the belly. The finger passed freely through the dilated canal and upper orifice, round the epigastric vessels, into the abdominal cavity. There was nothing like stricture to be perceived at any part. A single stitch was placed in the edges of the sac, which was condensed on the posterior part, and of a loose cellular texture on the anterior and lateral parts. The divided integuments were also connected by a central stitch, over a dossil of lint; a free incision carried through the *raphé scroti* posteriorly, exhibited a similar loaded state of the cellular membrane behind, as in front, and extending far beyond the mesial line.

This completed the operation: the fluid had escaped in such quantity as to form a pool in the bed. During the operation the patient threw up some frothy bilious fluid, and very soon afterwards had two pretty copious stools of semi-fluid consistence, and precisely of the same colour as the effused intestinal fluid. Temporary relief was obtained, but at 7 seven p. m. three hours after the operation, he died.

Dissection, ten hours after death.—The abdominal muscles were rigid, and a vast quantity of offensive flatus escaped on making the ordinary section, and through the scrotal wound. On tracing the small gut, a portion of the lower third of the ileum, equal to a hand's breadth in extent, presented the appearances of recent strangulation, accompanied with laceration, and extravasation of blood between the peritoneal and muscular coats. The fold was collapsed, of a claret colour, bounded by a faint ash coloured streak at either end, and presenting three or four insulated grey spots of incipient gangrene. An irregular aperture, three fourths of an inch in length, was found adjacent to the mesenteric attachment, and parallel to the axis of the bowel; and immediately contiguous to this wound, the serous membrane was detached from that beneath it to the extent of an inch, so as to exhibit the circular fibres of the muscular coat, as if dissected. Minute clots of blood were lying in this space, and some extravasation had taken place between the layers of the corresponding mesentery. The neighbouring small intestines was at several points inflamed, and congested even to extravasation beneath the peritoneal investment; liver reduced as if shrunk in bulk; its surface of a dark green hue, and slightly roughened. On section, it was tougher and paler than this tissue ordinarily is in youth and health.

In some excellent observations on this case, Mr. Travers remarks that it was an instance of "*hernie par engouement*," the strangulation having resulted from the loaded state of the intestine—an accident to which all those who wear no truss are of necessity liable. The great violence employed, accounts for the rupture of the gut, though not previously diseased.

Mr. Travers alludes to the circumstances under which rupture of the gastro intestinal tube may occur.

"I have known the intestine ruptured in the taxis, but it was ascertained that the stricture included two-thirds only of the cylinder, which was sloughy and separating by ulceration.

A man received a violent blow from a hammer on the pad of his truss, while stooping, by which the bowel was ruptured. This event was favoured by position, but could not have happened had the truss been efficient.

From compression, as by a wheel passing over the body, or pinning it against a wall, from the kick of a horse, from a fall across a beam, from running violently against a post in the dark, and similar causes, I have known the bowel ruptured; sometimes in more places than one, and sometimes complicated with lesion of the liver, spleen, or kidney, without breach of the walls of the abdomen. Distorted muscular action is sufficient to produce rupture of the stomach in a loaded state, as I witnessed many years ago in the case of a tumbling boy, who a few minutes before had been partaking freely of apples and gin, which were effused.

I never knew a case of ruptured intestine from vomiting or muscular action, unless ulcer had previously existed, by which the internal tunics were destroyed; in this case the peritoneum covering the aperture is probably burst, for the symptoms of effusion commence almost simultaneously with the act of vomiting. This act, I may observe, is abridged and impeded after rupture of the canal at any part; it is half vomiting and half expectoration, as if the muscles had lost their fulcrum, which is in fact the case; the fluid rises into the fauces, and is with a convulsive effort spit out of the mouth." 8.

Mr. Travers' account of the symptoms is graphic and concise. They are death-like, he says, from the moment of the injury. The mind is clear but depressed, as if overwhelmed by the irreparable nature of the injury. The countenance is pale and the features liny and drawn. The pulse is not immediately affected, but soon becomes quick, feeble, and irregular in its measure, intermitting, thready, and then no longer to be felt. The surface chills, but remains dry; there is a painful sense of dryness of the mouth and fauces; and frequent efforts to vomit in the way before described. Pain, which commences at variable periods, but is never long delayed, is acute, unremitting, extending over the whole abdominal region, which becomes tense and will not bear the slightest pressure. This produces great anxiety and restlessness, and frequent appeals for relief, and next for death. The peritoneal surface is reddened, but there is seldom any effusion of membranous or massive lymph agglutinating parts; only small deposits in tags and shreds roughening the surface, although the period of survival varies from twelve to six-and-thirty hours: the state of the canal perhaps determines this variation.

He naturally refers the prostration, &c. rather to the noxious effect of the effused intestinal air and contents on the nervous and absorbent tissue of the peritoneum. He has seen *pain* so little marked, as to lead to a doubt in diagnosis. With regard to treatment he has nothing to suggest, unless it be an absolute negation of food and diluent.

Mr. Travers next relates two cases with the view of urging his objections against the plan of leaving the sac unopened in the operation for hernia.

In the *first* case that proceeding was perfectly successful.

The *second*, was one of femoral hernia, in a man aged 55. The symptoms of strangulation had existed for three days. The usual means of relief having failed, the operation was done without delay. There was found, beneath a suppurating lymphatic gland, a small and very tense sac. The fibres of the crural arch were divided upon the point of the finger; but it was found necessary to carry the probe-pointed bistoury under the arched fibres of the fascia transversalis, in order to liberate the contents of the sac, which

returned with a gurgling noise into the belly. The return of the gut, and collapse of the sac, were perfect and satisfactory; the latter was in consequence not opened. The patient was imperfectly relieved; vomiting continued at intervals throughout the rest of the day and night, although several scanty, dark, and scybalous stools were obtained by injection, and small doses of aperient salts.

Evacuations continued, but on the fourth day bilious vomiting recurred, followed by abdominal pain, and constitutional depression. On the eighth day he died.

Dissection twelve hours after death.—Stomach distended; small intestines moderately full; peritoneum presented some red specks at the angles of contact of the intestinal folds. A portion of the tube of the ileum was disorganised, being an ash-coloured rag; but an adhesion at the mouth of the sac included this piece, so that it was not seen on opening the abdomen, nor until the adhesion gave way, when a quantity of pulraceous feculent matter passed into the pelvis. Another fold of intestine adhered to the sound side of this, and supported it against the ring. A portion equal to one third of the canal of the strictured gut was sound, and freely admitted the passage of a bougie, and by this route the feculent matter had passed from the upper to the lower part of the tract. On the mouth of the sac was deposited a lip or elevated border of lymph, corresponding to the line of separation of the slough from the living edge, so that no effusion into the belly could have taken place.

Mr. Travers observes that an artificial anus would probably have saved the man. But not only, he adds, was no benefit gained, but the separating process was retarded by the integrity of the peritoneal sac. Had this been opened by the ordinary incision at the time of operation, both the sloughing and the adhesive process would have been so much accelerated, as to have established the artificial anus in time for the patient's relief, and ultimately, perhaps, the continuity of the canal.

The following are Mr. Travers' opinions on the operation we have been discussing.

"I believe that the advantage is altogether hypothetical which is supposed to accrue from preserving the sac entire, in cases where the gut is simply paralysed, and unable to resume its function, the ordinary cause of failure of the operation for hernia; and that the practice is decidedly disadvantageous in all cases where inflammation is of such standing as to have endangered the continuity of the canal; for of such cases, doubtful as is the alternative, the only chance of recovery is in the speedy relief of the symptoms by artificial anus. The incision of the sac establishes at once a free fistulous opening into the peritoneal cavity, and identifies it with the external wound, which materially quickens the separating, and strengthens the fastening process; the spoiled bowel being left *in situ* at the mouth of the sac." 16.

"But not to insist upon the numerous cases in which the seat of stricture or the existence of adhesions does not permit us to leave the sac entire, the practice is objectionable, on the ground that where the stricture is of such firmness as to require the aid of the knife, we can never know the actual state of the bowel, with which it is the paramount duty of the surgeon to make himself acquainted, that he may regulate his proceedings accordingly." 17.

We fancy there can be no doubt of the occasional success, indeed propriety, of leaving the sac unopened. But the uncertainty that attends it, the

possibility, however slight, of leaving a source of mischief uncontrolled, and the questionable aggravation of risk which opening the sac occasions, will always tend to limit the employment and patrons of the measure.

The next observations are, it seems to us, extremely just.

"I have adverted to the paralysed condition of the strangulated bowel, as the ordinary cause of death after the operation for hernia. This opinion, which I published near thirty years ago, has been fully confirmed by my larger experience; yet it is not, I believe, generally entertained. Death is ascribed to the inflammation of the general cavity, where gangrene of the gut has not supervened upon its replacement; but in how few cases does inflammation prove intractable, when the operation is followed by full evacuations, demonstrating the re-establishment of the canal. I have repeatedly seen patients, after operation, in whom the symptoms of inflammation were feebly, if at all, indicated, and have inspected many 'post mortem,' in whom no agglutination interfering with the function of the bowel had taken place, or other explanation of the continued obstruction showed itself, than the utter atony of the congested bowel, which had been replaced; marked by its precise interposition to the flatulent portion of the tube above, and the collapsed piece below." 18.

We believe that this opinion is now obtaining a general assent among all well informed surgeons.

Mr. Travers speaks favourably, and surgeons will generally, we think, echo his opinion, of the effects of calomel both in cases of inflammation of the bowels, and of that paralysed state of it which has been referred to. In the latter instance, it stimulates the liver, and promotes that downward flow of bile, which being the most natural is, perhaps, also the best stimulus to the bowel.

II. OBSERVATIONS ON THE BLOOD-CORPUSCLES AND PUS-GLOBULES IN CERTAIN ANIMALS. By GEORGE GULLIVER, Esq. &c. &c.

Since the time of John Hunter, it has been supposed that the Globules of pus are merely the red particles of blood, deprived of their colouring matter, and modified in form and size by the inflammatory process. But Müller and Dr. Güterbock have doubted this, and Mr. Gulliver has lately been setting himself to work to determine it. He found this however, no easy matter, and the following admission which winds up some experiments on the pus of the dromedary, the paco, the guanaco, or wild lama, and the vicugna (all mammals with elliptical blood disks, and therefore, by reason of this peculiarity, well calculated, apparently, to determine the connexion between *them* and the pus-globules), will shew that the question is still to be decided.

"Without asserting the impossibility of a transformation of the blood-disk into the globule of pus, it can hardly be supposed that any such change took place in the experiments recorded in this paper. This question, however, appears to me to be one of more difficult solution by mere microscopic observation than would be supposed by any one who had not specially examined the subject; for the blood-corpuscles are so singularly susceptible of modifications in form, size and general characters from very slight agency, that examples might readily be shown of their approximation in appearance to the globules of pus. The action of water on the blood-disks of the mammalia, as well as of the lower vertebrate animals, has been well known since the time of Hewson.

Now, however, that so much attention is devoted to the constitution of the healthy as well as morbid animal fluids, the relation, if any, between the blood corpuscles and the particles of the secretions will probably be soon finally determined. From my observations it appears that the blood-disks of the goat are by no means the smallest among the mammalia, as had been previously supposed, but that the blood-corpuscles of the napu musk deer, and probably of its congeners, are so singularly minute that their average diameter is between 1-14000th and 1-12000th of an inch. It would, therefore, be interesting to examine the pus of an animal of this genus. In the meantime it may be mentioned that I found in the blood of the musk deer several large white spherical bodies, similar to those observable in the blood of other animals, and that the lymph globules did not differ in magnitude from those of mammals with large blood-corpuscles."

III. ON WHITE SPOTS ON THE SURFACE OF THE HEART, AND ON THE FREQUENCY OF PERICARDITIS. By JAMES PAGET, Esq.

Mr. Paget observes that these spots occur most frequently on the anterior surface of the right ventricle, and are often found tracking out the course of the trunks of its coronary vessels. They are rather more rarely seen on the posterior surface of the right ventricle, and on the right auricle; more rarely still on the left ventricle, and most rarely of all on the left auricle.

With these spots there almost constantly coincides some adhesion, by organised lymph, between adjacent parts of the pericardial membrane, which leads Mr. Paget to regard them as, in all cases, the results of pericarditis.

The adhesions generally consist of slender threads passing across the furrow between the aorta and vena cava superior, or between the aorta and pulmonary artery at some little distance from their connexion with the heart. In other cases, they are attached by one extremity to either of these vessels, and by the other to the opposite surface of the pericardium; and more rarely, though more distinctly, a band of adhesion passes from one of the spots or from some adjacent part of the heart to the opposite surface. Lastly, there may be found only the indications of adhesions that had once existed, in the form of small pearly granules on the surface of the aorta or cava, and on the corresponding surface of the pericardium. They sometimes require so careful an examination to find them that Mr. Paget feels no surprise at their being overlooked.

He finds that in 40 cases in which there were white spots on the heart, 35 have presented anormal adhesions, or their remains. In five cases only were the adhesions absent, and in 4 cases only an adhesion was found where there were no spots. In the 35 cases with adhesions, they were situated 23 times between the aorta and some other vessel, and 19 times between one of the great vessels and the opposite surface of the pericardium. In four cases he has found a band of adhesion passing from the surface of a spot to the pericardium opposite to it, and Dr. Budd has twice seen a similar formation. In many cases also there is a distinct roughness or radiated puckering, like a superficial cicatrix, on the pericardium opposite the spots. In these it is probable that the spots are indications of the pre-existence of adhesions; but in all other cases Mr. Paget would regard them as the effects of local and defined inflammation, which has been prevented from producing adhesion by the fluid simultaneously effused separating the serous surfaces,

and permitting part of the lymph to sink down to the great vessels, while the rest remained on the surface and in the cellular tissue of the inflamed part.

Mr. Paget thinks the question—whether these spots be seated in or on the pericardial membrane of the heart, one of little moment, this depending on the depth and degree to which the cellular or adipose tissue round the heart is inflamed. He believes that the reason of the frequency of the adhesions about the great vessel is, that in comparison with the walls of the heart, *they* are fixed and motionless, and present every facility for the adhesion and organization of the lymph that is effused, and which either gravitates to them in the recumbent position of the body, or is impelled thither by the currents which the action of the heart excites in the fluid around it.

The white spots have been said to occur “in half, or more than half, of those who are above the age of childhood. M. Bizot found them 45 times in 156 subjects; viz., in 31 out of 72 men, and in 14 out of 84 women; and I have myself found them in 45 cases out of 100; viz. in 32 out of 66 males, and in 13 out of 44 females.” Mr. Paget thinks that both the white spots and the adhesions cannot but be regarded as the effects of inflammation of some part of the pericardium. This he lays down as an axiom.

“Including then the white spots among the effects of pericarditis, I find that of 110 cases which I have lately examined at St. Bartholomew’s Hospital, 58 have presented signs of having suffered at some time from that disease. Among these, 40 out of 66 males, and 18 out of 44 females, were thus affected; and with respect to their ages, the morbid appearances were found in 5 out of 14 below twenty; in 25 out of 53 between the ages of twenty and forty; and in 28 out of 43 above forty.

Of these 58 cases of pericarditis, 49 were slight cases, marked by white spots and adhesions, or by effusion of small quantities of lymph; and 9 were severe with complete adhesions, or with abundant recent effusion.

The subsequent effects of the slight cases of pericarditis are not appreciable. In none of them was there any disease of the heart, but such as was sufficiently accounted for by some other coincident affection, as disease of the valves, &c. In three cases of complete and close adhesion of the pericardial surfaces also, in which there was no coincident disease of the valves, the patients were engaged in active work, and died of affections over which the state of the heart had no evident influence. In two other cases of complete adhesion, the valves were diseased, and both these proved fatal; one in three years, and the other in a year after the first attack, which occurred in the course of rheumatism.” 35.

He has not been able to ascertain the circumstances under which these slight affections of the pericardium have happened. He has several times seen such, as an accident of typhus fever, and he thinks it may exist in the course of many diseases. Of the 66 males examined, 24 were known drunkards; and of these 20, had had pericarditis; a proportion sufficient to prove that intemperance and its consequences are among the most powerful excitants of this disease.

This really appears to us to be a paper very creditable to its author. We rather think he is attached to the School of St. Bartholomew’s Hospital. We anticipate further communications of value from the same hand. For our own parts we feel quite convinced of the justice of Mr. Paget’s conclusions. They give statistical corroboration to an opinion which the analogy of the pleura would render the most probable.

IV.—REMARKS ON EMPHYSEMA OF THE LUNGS. By GEORGE BUDD, M.D. &c. &c.

It is one of the chief objects of Dr. Budd's paper to show that want of elasticity of the lung—in other words, absence of its natural tendency to collapse,—is the cause of many of the other anatomical characters of emphysema, and of most of the symptoms by which this affection is recognized. He observes, that the *elasticity* of the lung is one of the most efficient, if not the most efficient agent in expiration, the lung collapsing by virtue of it, and the parietes of the chest subsiding.

“One of the first effects of this condition is, that the lungs, and with them the parietes of the chest, do not collapse as they should do in expiration; the powerful muscles of inspiration are continually acting to elevate the ribs and dilate the chest, and have not their natural antagonist. The chest becomes, in consequence, permanently dilated; often beyond the limit attained in the most ample natural inspiration. It is the permanent elevation of the ribs that gives to the chest the cylindrical form, and, by raising in turn the shoulder-blades and collar-bones, that produces the high shoulders of asthmatic persons.

When this conformation of the chest is attained, its capacity cannot be much further increased by the action of the muscles, which raise the ribs. This circumstance gives a peculiar character to the breathing of persons affected with emphysema; the ribs being permanently raised by the dilatation of the chest, the increased capacity of that cavity which takes place in inspiration is mainly effected by the diaphragm, and the respiration is abdominal. It is owing to this circumstance that the erect posture is more necessary to asthmatics than to persons affected with pleurisy or pneumonia, in whom the respiration is of equal, or even greater, frequency; and that dyspepsia, by causing flatulence and distension of the stomach, and so opposing the descent of the diaphragm, is so often the cause of a fit. The attack of the paroxysm in the night—a peculiar feature of asthma—seems to result, not from the state of sleep, but from the horizontal posture, which causes impediment to the descent of the diaphragm. The abdominal character of the breathing is still further increased by the circumstance that the portion of lung in contact with the diaphragm is not so subject to emphysema as others. This character of the breathing is very conspicuous in horses affected with emphysema, on account of the shortness of their flanks, and is well known to horse-dealers as a sign of broken wind.” 41.

Another circumstance, is the almost fixture of the ribs, which remain comparatively motionless amongst all the dyspnœa.

The *cough* of asthma is peculiar. We may observe that the parietes of the chest are little affected by it, and that it is short and interrupted; a circumstance the more distressing because the catarrh, to which persons affected with emphysema are habitually subject, is attended with a copious secretion from the bronchial membrane. The efforts of cough being ineffectual, and the irritation of the mucus remaining, the cough repeats itself in fits. Thus, in this distressing complaint, not only is less air than natural admitted to the internal surface of the lungs, but that surface is also sheathed from its action by a copious secretion which the cough is inadequate to detach. Catarrh, then, is the great enemy of the asthmatic, and change of climate the great remedy.

When the emphysema is less considerable, or only partial, of course its influence will be proportionably less. The emphysematous portion acting less, the healthy must act more. The air entering the former imperfectly produces a feeble respiratory murmur. Less blood too passes to the morbid lung. Dr. Budd insists on this, quoting two cases of Laennec's, and one of his own in illustration. We may introduce the latter.

In the winter of 1837, a man was admitted into the Dreadnought, affected with general emphysema of the lungs and pulmonary catarrh. He died in a state of asphyxia soon after admission.

The lungs were found extremely dry and pale: there was dark blood in the large veins of the lungs; but, except from these, scarcely a drop of blood escaped when free incisions were made in all parts of the lung. There was no pneumonia, but the small bronchial tubes contained yellow puriform mucus.

He adds:—

“These cases are very striking; for what can be more remarkable than to find paleness, dryness, and absence of congestion in the lungs of persons who have died in a state of asphyxia; the well-known and most marked effect of that condition being the greatest possible congestion of the lungs! The conclusion is, therefore, peremptory, that during life the natural vascularity of the lungs, at least as regards the pulmonary artery, was much diminished. This restriction is necessary: since, in the cases referred to, the bronchial membrane was red and turgid. The coincidence of the pale, aneuric condition of the pulmonary tissue, with the congested state of the mucous membrane of the bronchial tubes, in the same lung, is worthy of observation, as showing an essential difference between bronchitis and pneumonia—a difference which has its origin in the different purpose and distribution of the bronchial and pulmonary arteries.” 46.

One effect of this condition of the lung is imperfect arterialization of the blood, and, consequently, diminution of animal heat.

Another consequence of this diminution of the capillary system of the pulmonary artery, is obstruction to the circulation through it; whence arise dilatation of the right cavities of the heart, and the tendency to general œdema, which is so frequently met with in emphysematous persons.

Dr. Budd alludes again to broken wind in horses, and shews, from twenty dissections, its dependence on emphysema of the lungs.

Mr. Jackson found that, of twenty-eight persons affected with emphysema of the lungs, he found that eighteen were the offspring of parents (father or mother) affected with the same disease, and that several of these had died in its course. In some instances, the brothers and sisters of these persons were also emphysematous. On the other hand, of fifty persons not affected with emphysema of the lungs, three only were the offspring of emphysematous parents; whence it follows that emphysema is very frequently an hereditary disease. A fact important to “man and horse,” at all events, to the breeder of the latter.

Mr. Budd alludes to the opinion of Laennec that bronchitis is the ordinary cause of emphysema, the mucous secretion opposing the free exit of air—and to Louis, whose dissections and researches disproved this frequent antecedence of bronchitis. He adds—

"Laennec was right in supposing that dilatation of the air-cells is occasioned by an obstacle to the free escape of their contents; but he was wrong in believing this obstacle to exist generally in the bronchial tubes. Louis was correct in stating that emphysema often comes on without the previous occurrence of bronchitis; but he was, I believe, in error, when he ascribed dilatation of the air-cells to a cause different in its nature from that which produces dilatation of other organs. Dilatation of the air-cells, like dilatation of the chest, is a necessary consequence of want of elasticity of the lung. The powerful muscles of inspiration are continually acting to dilate the chest, and thence, by virtue of atmospheric pressure, the air-cells. This agency is not counteracted as it should be, by the natural elasticity of the lung; and the air-cells, as well as the cavity of the chest, are in consequence permanently dilated.

I have already shown that the other anatomical characters of emphysema, together with most of the symptoms of this disease, result from the same cause; and I am, therefore, led to consider the absence of elasticity* of the pulmonary tissue as the fundamental character and primary condition of emphysema of the lungs." 53.

Such is Dr. Budd's view. We may be permitted, however, to remark that no proof is offered in support of it. The emphysematous lung is less elastic than it should be, but is that elasticity the consequence of the emphysema, or the emphysema of it, or do they play into one another's hands?

Dr. Budd next passes to the subject of asthma.

This has been generally ascribed to constriction of the small bronchial tubes, from spasm of the circular fibres surrounding them. But Dr. Budd, with others, disputes the muscularity of the fibres in question. To satisfy himself, he performed some experiments with the assistance of Mr. Burk.

A rabbit, between two and three months old, was killed by a smart blow behind the ears. As soon as its struggles were over, the trachea was taken out, and the anterior part of the cartilaginous rings removed by the scissors, in order that any motion produced by the transverse fibres at its posterior part might be more readily seen. When a portion of the trachea, thus prepared, was placed on a plate, not the slightest movement could be seen in it, nor could any be excited by the wires of a galvanic battery. One of the lungs was then removed, and placed on the plate, between two and three minutes after the struggles of the animal had ceased. The end of the bronchi in which the lung terminated, was obstructed by light froth. No motion could be observed in this froth, or in the lung, before or after the wires were applied to different points on the surface of the lung, neither could any motion be perceived, when the lung was cut into, and the extremities of the wires were placed near one of the bronchial tubes.

The abdomen was opened at the end of five minutes, when the muscular fibres of the stomach and intestines were seen to contract slowly, but very distinctly, under the galvanic influence. At the end of ten minutes, these

* "Magendie ascribes the difficulty of breathing in emphysematous persons and in broken-winded horses, to want of elasticity of the lung, but he does not attribute the dilatation of the air-cells to the same cause: on the contrary, he says, 'par suite de la rupture d'un certain nombre de cellules, et de la dilatation d'un certain nombre d'autres, le tissu de l'organe a perdu de son elasticité, et il ne reagit plus avec une energie suffisante sur l'air qui a penetré dans son parenchyme.'" *Legons*, t. i. p. 169.

contractions were no longer perceptible; but vigorous contractions could still be excited in the heart, and in the muscles of the larynx.

Another rabbit, of the same age as the former, was killed in the same manner; one of the lungs was taken out as quickly as possible, and placed on the plate. Not the slightest movement could be observed in it, nor could any be excited by placing the wires of the battery at different points of its surface, or in contact with the bronchial tubes. The trachea was then removed, and treated as in the former experiment, and with the same result. The abdomen was next opened, the intestines were moving from peristaltic action. The muscles, both of the intestines and of the stomach, which was distended, contracted very distinctly when galvanism was applied. At the end of ten minutes from the death of the animal, these contractions were no longer discernible; but more than half an hour after, contractions could be excited in the heart, and in the muscles of the larynx.

Passing over some objectionable experiments of Varnier's, Dr. Budd refers to Wedemeyer's, one of which is thus described by Müller.

"Wedemeyer laid bare the trachea in a living dog, and freed it from cellular tissue for the space of two inches: he then cut out a portion in front, and irritated the posterior wall of the trachea mechanically and by galvanism, but could not produce the slightest contraction. Wedemeyer now opened the thorax quickly, and removed the lungs with their bronchi. He made several sections of the larger bronchi, but could discover no sign of contractility in them. On applying galvanism, however, to the smaller branches of about one line in diameter, he thought he saw them undergo a distinct contraction, but it took place very slowly." 58.

Dr. Budd observes:—

"This experiment of Wedemeyer, as far as the trachea and larger bronchi are concerned, agrees with those that I have before related: and together they seem to establish that no contractions can be excited in those tubes by galvanic influence. This point, if admitted, affords an almost conclusive argument against the muscularity of the smaller tubes. For the transverse fibres in smaller tubes have the same arrangement as in the larger, and we cannot suppose them to be of different nature without admitting a break in the law of continuity. The resemblance of the transverse fibres of the bronchial tubes to the muscular fibres of organic life—the chief argument in favour of the muscularity of the former—is certainly more striking for the fibres in the larger than for those in the smaller bronchi. The contraction witnessed by Wedemeyer in tubes of a line in diameter, resulted in all probability from chemical changes, especially the coagulation of albumen, caused by the galvanic influence. Such changes were very manifest in my own experiments. The manner in which I performed the experiment, by placing the wires, not in contact with one of the small bronchial tubes, but at different points on the surface of the lung, affords a much more delicate test of the muscularity of the bronchi. If these were muscular, a great number of them would be excited at once when the wires were placed on the surface of the lung and the galvanic influence diffused through its mass: and their combined effect would be visible in movements of the surface of the lung, or of the froth obstructing the orifice of the terminal bronchus." 59.

Dr. Budd uses another argument. If, says he, the bronchial fibres are muscular, they must be of the involuntary kind. But the external muscles are voluntary. Then there may come a want of accord between the two. For we might will to breathe more quickly, and the bronchial

muscles might not, on the instant, act so. We confess that this objection does not seem so conclusive to us as to its author. The muscles of deglutition are voluntary in the mouth, less under the control of the will in the pharynx, and removed from it in the œsophagus. Yet things go on pretty well, whether we eat fast or slow. Only suppose an association of action through the medium of the nerves, and the difficulty vanishes.

The following reasoning is, perhaps, more conclusive,

"The idea of spasm of the bronchi was suggested to Cullen, and has been generally adopted, from inability to explain in any other way the symptoms of asthma. A little consideration, however, is sufficient to show the improbable nature of this supposition. The large bronchial tubes, and, in man, those even of the fourth and fifth ramifications, cannot be closed by reason of the cartilaginous rings or plates, which wholly or partially surround them. Supposing, then, the circular fibres to be muscular, only very small bronchial tubes could be closed by their action; and the closing of a few of those tubes would only obstruct the passage of air to the small portions of lung to which they lead, and would not cause much difficulty of breathing. The spasm, to explain the symptoms of asthma, must be supposed to affect the small bronchial tubes in a considerable portion of the lungs; and as, in almost all cases of asthma, some shortness of breathing remains, in the intervals of the fits, we must admit, and, in fact, most physicians who have written on the subject have admitted, that some degree of spasm is permanent." 61.

The fact that diseases of the heart and great vessels, and that emphysema of the lungs are frequent causes of the "asthmatic dyspnœa," prevents, no doubt, in many cases, the necessity for resorting to the hypothesis of spasm. There still, however, says Dr. Budd, remain some cases, which at present we can only explain by supposing the dyspnœa to be nervous. It seems probable that the number of such cases will be still further diminished, and that many of those fits of asthma, which we are now forced to consider nervous, will be discovered to depend on some organic change which has as yet escaped our observation, perhaps on some morbid condition of the blood itself. If the asthma be really nervous, Dr. B. concludes that it depends on spasm or suspension of the normal action of the diaphragm and other muscles of inspiration.

V. ON A REMARKABLE EFFECT UPON THE HUMAN GUMS PRODUCED BY THE ABSORPTION OF LEAD. By HENRY BURTON, M.D., &c.

Dr. Burton has examined, since 1834, the mouths of patients admitted into his wards, who had been exposed to the action of lead in the course of their usual avocations; and of those also who had swallowed the acetate of lead medicinally. "The result," he adds, "of this investigation has proved highly interesting. It has led to the belief that a salivation in the ordinary sense of the word does not occur in one case out of thirty-six cases of lead colic, the number examined in my wards; nor in one case out of fourteen cases of pulmonary disease, which were treated by me with acetate of lead; but in the total number of fifty patients who were examined whilst under the influence of lead, a peculiar discolouration was observed on their gums, which I could not discern on the gums of several hundred patients who were not under the influence of lead, and which I believe cannot

be produced by any other internal remedy." The sign, therefore, becomes diagnostic of the presence of lead, and may obviate in many cases the infliction of lead colic.

The following is a sufficiently accurate account of the appearances. The edges of the gums attached to the necks of two or more teeth of either jaw, were distinctly bordered by a narrow leaden-blue line, about the one-twentieth part of an inch in width, whilst the substance of the gum apparently retained its ordinary colour and condition, so far as could be determined by comparing the gums of these patients with those of other patients of the same class in the hospital: there was no invariable tumefaction, softening or tenderness about them; neither was there any peculiar savor in the breath, nor increased salivary discharge to be observed on any of the fifty patients; and on thirteen out of fourteen patients, who were treated in the hospital with acetate of lead, and carefully watched during its employment, the substance of the gums, the smell of the breath, as well as the quantity and colour of the saliva, preserved the same characters, after the appearance of the blue line, as they respectively possessed before the saturine preparation was administered; but on the fourteenth patient, who died from hæmoptysis, the gums, which were, previously to the use of lead, tumid and soft, became contracted and firm, after the blue line had appeared.

In no one instance, did Dr. Burton observe any thing at all similar to the bleeding tumefied gum of scorbutus. Nor was such a state of gum as is induced by mercurial salivation ever observed by him.

The discolouration is a very constant occurrence; it precedes all other unequivocal symptoms produced by lead, and is not equally exposed to the imputation urged against most medical data, of being fugitive and deceptive. For the discolouration is very permanent; it has endured through months and until death, and having been once observed may be afterwards easily recognised. On a few patients only had it entirely disappeared before they quitted the hospital; on others it had only partially vanished. In many it continued with little or no change; and on a few patients who died after the medicinal use of lead had affected their gums, the discolouration appeared more distinct a few hours after death, and before putrefaction could have begun than during life. It cannot be confounded, when distinct, with the ordinary colour of the gums, during life; and after death any ambiguity which might have existed previously will be entirely removed by the strong contrast of colours disclosed on the gums of the dead body. The pathognomic value of the discolouration will bear a proportion to the regularity of its appearance under similar conditions; and in some cases, a little ambiguity may arise from the difficulty of discriminating between imperfectly defined colors; but this ambiguity will soon cease if the patient continues exposed to the action of fresh portions of lead; and in all cases the phenomenon will possess some importance if viewed in connexion with the ordinary symptoms of the presence of lead.

The sign in question, has enabled Dr. B. to detect the presence of lead in the system, when the patients themselves were not aware of it. Dr. Burton relates two rather interesting cases.

The first was that of a carpenter. He had never worked in lead, nor had he any suspicion of having been exposed to its influence; but he had experienced a severe illness about four years before his admission into the

hospital, which had been followed by a partial paralysis of the fingers of his left hand. In other respects his health was restored, and continued good until a few weeks before he was placed under Dr. B.'s care; he then began to feel languid, and to experience a sense of weight about the limbs; his appetite failed, and subsequently he suffered a pain in the stomach, which extended upwards over both breasts to the shoulders and down the arms; the bowels had been constipated for a week previous to his admission, and during this interval vomiting had several times occurred. His nights had been passed without sleep; his pulse was 96, soft and regular, his skin warm, his countenance pale. In addition to these symptoms tremors were noticed in both hands when the patient extended his arms, and the gums were very distinctly marked with a leaden-blue border line. The combination of symptoms in this case was such as indicates lead colic and paralysis of the wrists; but in what manner lead was introduced into the system could not be ascertained.

The *second* patient was a cordwainer, who had, until his admission, resided in the country. The features of this man were sallow; he was spare, entirely free from paralysis of the voluntary muscles, but he had experienced for several years, at intervals, repeated attacks of colic, by which he had been confined to his bed seventeen times. During these attacks he had endured violent pains in the abdomen, frequent vomiting, and obstinate constipation, sleepless nights and loss of appetite. The gums of this patient were rather turgid, although not more so than nine-tenths of the gums of those patients who resort to hospitals; they were also very well marked with the peculiar blue line, but no other evidence of the patient having been exposed to the action of lead could be obtained.

Dr. Burton believes, and it is very probable, that however ignorant they might be of the *mode*, these patients were labouring under the influence of lead. Our author, indeed, ventures to express a strong notion that the unobserved introduction of lead into the human body is continually taking place, to much greater extent than is usually imagined, and that it has often caused an ambiguous assemblage of morbid symptoms; for although the influence of lead on the system is readily detected when the symptoms are severe and follow each other in the expected order of succession, yet when they are mild or do not follow each other in the regular and stated order of succession, if the mind of the physician is not awake to this cause, or the cause cannot be ascertained, then the symptoms appear ambiguous, and they may be misinterpreted without exposing the physician to the imputation of unpardonable ignorance, or of culpable oversight. But he contends that, in abdominal diseases simulating lead colic, as well as other forms of disease about which any ambiguity exists, an inspection of the gums will decide the question, whether the symptoms were produced by lead. Thus, cases often occur in hospital practice in which the functions of the brain and cerebral nerves are paralysed by lead, and in which coma, vertigo, headache, amaurosis, and sometimes deafness, are the most evident effects; in other instances the patients complain of articular pains resembling those of chronic rheumatism, periostitis, and secondary syphilis. In many of these cases an inspection of the gums will assist in making a correct diagnosis.

He thinks that articular pains, proceeding from the action of lead, have been treated sometimes as those of chronic rheumatism, at others as those

of secondary syphilis, often empirically. And he quotes a case from Andral—that of a painter, who never having experienced lead colic, suffered during four or five months severe pains in the membranes of the head, which had been first regarded as rheumatism, and unsuccessfully treated by bleeding and vapour baths; but there being afterwards reason for believing the pains were produced by lead, the patient was treated for ordinary lead colic, and recovered.

"The next problem to be solved is, whether the phenomenon can be made available as a means of averting the infliction of lead colic in the treatment of disease with saturnine preparations. To give an incontestable solution of this problem would require a greater number of data than I have hitherto been able to collect; nevertheless, on referring to my ward books of the last few years, there appear to have been about twenty-seven patients treated with acetate of lead and opium; and out of that number, there were twenty at least in whom no colic and no other material inconvenience was induced by the remedy, except constipation; in two or three cases the colic symptoms were very severe, but in these latter the hæmorrhage was profuse, and the dose only proportionately large. But with ordinary precautions, colic does not occur severely during the medicinal use of lead; and I have frequently persevered in the use of the salt, for some time after the blue line had appeared, without producing it, or only slightly." 66.

The time required to produce the blue line varies in general with the amount of the dose, but not always; and, *ceteris paribus*, large doses affect the gums sooner than small. Mr. Moyle of Chacewater produced the discolouration in twenty-four hours, by giving four doses of gr. v. each, every six hours; and Dr. B. thinks it very probable, that in cases of poisoning, from "the irritant effects of large doses of the soluble salts of lead," similar to those described by Dr. Christison in his very valuable "Treatise on Poisons," the discolouration would be obvious on the gums in five hours after swallowing the salts; although the time required in several cases under Dr. Burton's own care, was much longer, in which large medicinal doses of acetate were given frequently in twenty-four hours.

Dr. B. suggests an examination of the gums in medico-legal investigations, and he also suggests to workmen the precautionary examination of them in their own persons.

VI. A CASE OF DISEASE IN THE POSTERIOR COLUMNS OF THE SPINAL CORD. By EDWARD STANLEY, Esq. F.R.S. &c. &c.

Mr. Stanley is so well known as an accurate anatomist and pathologist, that any fact which he relates will carry with it the greatest possible weight. The case which forms the subject of his present paper, derives much of its value from the eminent character of its author.

Case.—Joseph Cosden, aged 44, was admitted into St. Bartholomew's Hospital on account of the loss of the power of motion in his lower limbs, of which he gave the following history; that it had not been preceded by any external injury, and had commenced about three years previously; that at first, and for some time, the impairment of motion was slight, but had afterwards progressively increased to the present period. In the investiga-

tion of the case on its admission, the patient was lifted into a chair; and when thus sitting, he did succeed, by a great effort, in raising his legs from the ground; but afterwards the inability of motion became complete through each lower limb in its entire extent. There was no discoverable impairment of sensation in any part of either limb: on scratching, pricking and pinching the skin, nowhere was any defect of feeling acknowledged by the patient. In the upper limbs there existed no defect either of motion or sensation. The general health was feeble. In the idea that the impairment of the lower limbs might in some degree depend on congestion in the vessels of the spinal cord, a few ounces of blood were taken, by cupping, from the loins; which reduced the pulse, and occasioned the feeling of extreme debility, but with no improvement in the limbs. Mercury was also administered to the extent of inducing moderate salivation, but with no benefit. The further symptoms were simply those of gradually increasing exhaustion of the vital powers, with inability to expel the urine or retain the fæces. Quinine, ammonia, wine, with the most nutritive diet, produced a slight and transient impression on the general health, but none on the condition of the lower limbs. At length he sank, about three months from the period of his admission into the hospital.

The case was supposed to be one of disease of the anterior columns of the spinal cord. It turned out to be the contrary.

Dissection—The cord was found to be the only seat of disease, but that this disease was strictly limited to its posterior half or columns. About an ounce of serous fluid was found in the theca of the cord; in other respects the membranes were healthy. The substance of the cord through its posterior half or columns, and in its entire length, from the pons to its lower end, had undergone the following changes of colour and consistence: it was of a dark brown colour, extremely soft and tenacious. The substance of the cord, through its anterior half and entire length, exhibited its natural whiteness and firm consistence; and on making a longitudinal section of the cord through its centre, and in the antero-posterior direction, the boundary line between the healthy and diseased nervous matter was seen to be most exact; it was a straight and uninterrupted line from the pons to the lower end of the cord. The roots of the spinal nerves were unaltered. The brain was healthy. The mucous membrane of the bladder exhibited the characters of recent inflammation. The kidneys and other viscera were sound.

Mr. Stanley observes that the examination of the body, in this instance, was witnessed by many competent observers—that it proves the uncertainty of our knowledge of the functions of the anterior and posterior columns of the cord—and, finally, that we have no means of explaining the continuance of sensation and motion in the upper limbs, while the cervical portion of the cord exhibited such alteration of structure. If well-authenticated cases are on record, in which destruction of a portion of the cord throughout its entire thickness has not led to the abolition of sensation or motion below the seat of disease, that does not, unfortunately assist in elucidating, however it may support such cases as the present.

VII. ON THE ARRANGEMENT OF THE INTERMEDIATE VESSELS ON SURFACES SECRETING PUS; WITH A NOTE REGARDING THE VASCULARITY OF ARTICULAR CARTILAGE. By ROBERT LISTON, &c. &c. &c.

Mr. Liston is well known by his friends to have devoted much time to the microscope, and to be very expert in the use of it. He is not likely to play with it, nor to allow what it discloses to be lost to surgery. We must all feel indebted to him for the following observations on a point of much importance—the mode in which granulations are formed and receive their vascular supply.

Mr. Liston remarks, that the granular deposit of lymph on surfaces exposed and unprotected by integument, is speedily supplied by blood-vessels, nerves, and absorbents, admits of no doubt, and is easily demonstrated by the examination and treatment of any healing ulcer. Mr. Liston describes the arrangement of the intermediate vessels on granulations, as they appear in the cysts of abscesses, and on open sores.

“It will appear, on careful examination, that the abscess is coated on the interior and free surface by a layer of lymph of greater or less thickness, as may be: generally, about one-tenth of an inch. This layer is first of all deposited in a fluid state, and consists of the liquor sanguinis, or fibrine in a state of solution, as separated from the blood. It is exuded in the form of minute transparent drops, which being spontaneously coagulable, gradually become milky and consistent. The granules appear first of all to become coagulated on the surface, and the interior of the drop, as it were, remains for a time fluid and transparent. A sort of minutely granular or tuberculated surface externally, cellular internally, is thus formed.

This layer, with which the purulent deposit is in immediate contact, by and by becomes more consistent, and acquires a yellowish white colour. It lies upon a highly vascular membrane, to which it adheres more or less intimately, according to the duration of the process. The vessels in this tissue are curiously interlaced, anastomosing freely with each other, so as to form a very fine and delicate net-work.

There seems to be in this lymph, from the first, an impulse, as it were, towards organization; and after a very short time it becomes permeated by minute blood-vessels, which admit our fine injections. The diameter of the vessels was most frequently 1-2000th of an inch. The extreme sizes being 1-4000th and 1-1333d; and the following intermediate measurements were obtained, viz. 1-3000th, 1-2000th, 1-1660th, and 1 1500th of an inch.

These capillaries project into the new and adventitious membrane from that underneath it; often, in straight parallel lines. Their arrangement in the granules on the free surface is, however, distinctly looped and tortuous; and these loops communicate with each other.” 87.

Which, asks Mr. Liston, is the “pyogenic membrane?” The deposit of lymph in the greater number of situations and circumstances precedes the secretion of pus; and when this layer becomes organized, and the vessels assume the curiously convoluted and looped arrangement shown above, there can be no doubt but that the office of secretion is performed there. The resemblance to the looping of vessels in healthy secreting surfaces, the skin, the mucons membranes, &c., must be obvious.

Mr. Liston further inquires—how these looped vessels are produced. It is not easy to imagine that they are mere elongations of the original capil-

laries of the part, which have been dilated and relaxed. The deposit, as already remarked, seems to have an internal impulse towards organization. Mr. Hunter suspected that new parts had the power of making vessels and red blood independently of the original circulation—a view supported by observations on cold-blooded animals.

In solutions of continuity, proceeds Mr. Liston, reparation takes place, as has been well known since the time of John Hunter, by the deposit of plastic matter; and this layer, as that distinguished pathologist has shown, is speedily supplied by blood-vessels. On a careful examination of a portion of injected ulcer, more particularly in a profile view of it, it will be found that the secreting vessels are arranged in a precisely similar manner to those in granular deposits of lymph. This might have been expected, and so might the slight difference in appearance. These vessels on exposed surfaces are disposed in exactly the same fashion; but they are also enormously and irregularly dilated—varicose in fact. This arises, no doubt, from want of support, or from unfavourable position. And in neglected ulcers the vessels of the granulations often burst. The dark colour of the sore, the bloody and gleety discharge, very soon show to the surgeon of experience in hospital practice whether or not the patient obeys the injunction to keep the limb elevated. Soon also, does he discover whether or not, any trick is attempted by ligature or otherwise, to interrupt the progress of cure.

The purulent secretion is probably transuded through the coats of the looped, tortuous, and dilated capillaries.

As regards cicatrix, it may be remarked, that the vessels speedily contract. They are arranged in a reticular fashion, but, after a time, the net-work is not nearly so full as in the surrounding skin.

Occasionally, an approach to the papillary arrangement seems to be attempted, as seen in good sections after successful injections.

Mr. Liston offers a few practical deductions.

“And first of all, the mischievous effects of squeezing together the sides of suppurating cavities may be noticed.

By this proceeding, adopted through a blind and thoughtless observance of the bad practice of others, the lymphatic coating is separated from its vascular base; the circulation of the part is unnecessarily excited; bloody and often putrid secretion is poured out; and the general health in consequence disturbed. If a sufficient opening is made in a dependent position, the accumulated secretion is rapidly enough discharged; and the walls of the cavity come together and coalesce through the natural elasticity and action of the parts.

As regards ulcers, the paramount advantage of an elevated position of the affected part must be sufficiently obvious. The rapid disappearance of congestive swelling, and of inflammation by an observance of this practice alone, in many cases, must make apparent the good effects of favouring the return of blood.

The larger veins, previously varicose and over distended, become collapsed, and almost disappear.

The same effect upon the varicose capillaries in the solution of continuity necessarily follows: the colour of the sore is speedily altered for the better, the painful feelings abate, and the nature of the discharge is ameliorated. Until this is the case, and as long as over-action, to any degree exists, soothing and relaxing applications are advantageous; exudation of lymph and plentiful secretions of pus are thus encouraged.

These are followed by mild astringents and stimulants, by which the dilated and weakened condition of the coats of the vessels may be supposed to be amended.

The discharge is thus moderated, and the granulations prevented in a manner, from becoming exuberant. The beneficial effects of uniform support can also be well understood." 92.

Mr. Liston concludes by alluding to the question whether cartilage is extravascular or not.

He has been enabled to demonstrate the existence of vessels, most undeniably, in the articular cartilage of several diseased joints, and presents a sketch of one portion. In this the vessels run straight, in parallel lines, from the injected membrane of the bone. Many of these are joined at their further extremity in the cartilage, thus forming long loops. The possibility of cartilage being acted upon, nourished, absorbed, and repaired, by its own vessels, must thus be admitted. In fact, in many of the specimens in Mr. Liston's possession, lymph is deposited on the surface of ulcerated cartilage, and injected vessels can be traced passing into this lymph. Mr. Liston concludes.—

"Under circumstances favourable for it, solutions of continuity in cartilage appear to be repaired, without however much reproduction of the tissue.

It would appear that ulcerative absorption of cartilage occurs in three forms :

First. In consequence of disease of synovial membrane, which becomes much swollen, and to which processes of adventitious tissue are superadded, the cartilage is removed where it is encroached and pressed upon. The prolongations of the membrane, in a highly injected state, as well described by Mr. Key, fit most accurately to every crevice of the breach of surface in the cartilage. At first there is no union of the surfaces, the membrane being merely accurately adapted and closely applied to the ulcerated surface. Frequently, however, as the disease advances, adhesions form betwixt the vessels of the synovial membrane, and those proceeding from the medullary web. An adhesion of considerable length is thus often formed betwixt the synovial surface, and the articulating end of the bone.

Second. Absorption of cartilage seems often to arise from swelling and intense vascularity of the tissue connecting it to the bone. This cellular tissue is scarcely demonstrable in the healthy condition of parts, any more than is the vascularity of the articular cartilage ; but it becomes most remarkably developed in a state of disease. The cartilage is in consequence loosened and thinned ; at first, apparently, by interstitial absorption. Then it becomes perforated, and an ulcer, of greater or less extent, with thin undermined edges, is presented. In consequence of disease of the interposed tissue, the cartilage is sometimes thinned, and ultimately detached in flakes ; forming, in fact, sequestra of the tissue.

Third. Lastly, cartilage still firmly adherent to the subjacent bone, is permeated by vessels communicating with those of the bone, and ulceration proceeds from the free surface. The cartilage, very often previously swollen and softened, is gradually and irregularly thinned ; the bone is exposed, and is finally acted upon also, by ulcerative absorption. The ulcerated surface is generally coated by a layer of organized lymph. More than one form of the ulcerative process may sometimes be observed in the same articulation." 95

A valuable communication.

VIII. REMARKS ON THE DIAGNOSIS OF FOREIGN BODIES IN THE LARYNX.
By CÆSAR H. HAWKINS, Esq. Surgeon to St. George's Hospital.

Mr. Hawkins' observations are always of so practical a bearing as to render them equally interesting and instructive. The following quite support that character.

Mr. Hawkins commences by relating a case.

Nov. 18, he was asked to see Miss S. aged 12 years, who had been suddenly seized, while taking some soup about eight hours before, with violent vomiting, and suffocating cough, which lasted for a short time, and then left her with a noise in breathing, which was somewhat difficult, and with a sense of pain beneath the cricoid cartilage. She believed she had felt a piece of bone in her mouth at the time, and that she had swallowed it. About two hours after the accident an emetic had been administered by Mr. Davis, the assistant of a medical man in the neighborhood, which had brought up some solid meat, and seemed to have a little relieved her.

When Mr. Hawkins saw her she was breathing with a croupy noise at each inspiration, but with out much labour, and she complained of some pain and tenderness in the larynx, referred more particularly to the cricoid cartilage. She could swallow without any difficulty, and on examination with a pair of curved forceps, it was evident that there was nothing in the œsophagus at the seat of the pain. The finger, passed behind the epiglottis, felt nothing like a foreign body in that situation; her voice was natural, and there was no cough, nor had there been any since the accident, to which attention would otherwise have been drawn. The tongue was a little dirty, she was flushed and the eyes suffused, and the pulse quickened, and there was some anxiety of expression. She had been in good health before the accident, except that she had a slight cold the day before, with a sense of tightness across the epigastrium. The lungs appeared healthy, and there was no other apparent cause for the croupy noise and difficulty of respiration, except a good deal of fullness and redness of the tonsils and palate and fauces, which might extend to the larynx, but which might also have been the consequence of the vomiting occasioned by the accident and by the emetic.

Mr. H. had little doubt that a piece of bone had "gone the wrong way," but under the circumstances he thought it advisable to leave her till morning, administering some calomel and antimony, and applying a sinapism to the throat.

Next morning, there was neither distress in breathing, nor feverishness, but the noise in respiration was as constant as before, and was equally audible in expiration and in inspiration, and a little pain and tenderness remained below the cricoid cartilage. Both Mr. Hawkins, however, and Mr. Babington, who saw the case with him, concurred on the propriety of not delaying the operation.

"I therefore made the usual opening into the trachea, just below the thyroid gland, which was unattended with any hæmorrhage, and removed a small piece of two rings of the trachea, in the centre of the incision, which was made through three others also, and endeavoured to get the piece of bone thrown out by making the patient cough repeatedly, but without avail; feeling the foreign substance

with the probe just above the opening, I then introduced a pair of forceps and extracted it, not without some little violence, from the manner in which it was fixed. It was a portion, as it seemed, of the spine, shewing the curved surface of the canal of a vertebra in a neck of mutton, nearly half an inch long, and a third of an inch wide, the outer surface being very rough and irregular, so as to account for its fixed position below the glottis." 100.

The breathing immediately became noiseless, and neither cough nor other unfavourable symptoms succeeded.

Mr. Hawkins makes some observations on the case, which, we think, should receive the serious attention of surgeons.

1. In by far the greater number of instances, a foreign body which has entered the windpipe continues to be moveable within the trachea. Mr. Hawkins quotes Mr. Ryland's account of the symptoms. "From laryngitis or croup," says Mr. R., "this accident may be distinguished by the absence of fever at first; by the very sudden manner in which the symptoms came on; by the *intermission* in the difficulty of breathing, which sometimes continues for an hour or two; by the *noise* occasionally heard when the foreign body is impelled against the vocal cords; by the *excessive violence* of the *cough* after this occurrence, and most *particularly* by the chief difficulty of breathing being during the time that the *expiratory* process is going on; whilst in laryngitis the chief difficulty is in the act of inspiration."

Mr. Hawkins observes on this:—

"No doubt this account is generally correct, when the intruding substance is *within the trachea*, even when it has been surrounded by tenacious mucus, causing it, at the time of operation, to be adherent to the membrane of the tube, so as not to be immediately expelled, as in a case of Sir Charles Bell's at the Middlesex Hospital; or when it has adhered by some roughness, as in a case of a piece of the jaw of a mackarel, extracted by Pelletan. Yet it will be observed, that in the preceding case scarcely one of these symptoms corresponded with what really took place; the attack was indeed sudden, so as by itself to render the case scarcely doubtful; but there *was* a good deal of feverish excitement when I first saw the patient: there was *no intermission* whatever in the difficulty of breathing, and for the same reason *no noise* could be heard by the striking of the substance against the vocal cords; there was absolutely *no cough* whatever after the first few seconds; and instead of the noise in breathing being chiefly in *inspiration*, it was heard, on the day of the accident, only in *expiration*, and on the following day it was equally audible in *both portions* of the respiratory process." 102.

2. When a foreign body is moveable within the trachea, it has been frequently found to pass into the right bronchus; and some interesting cases of this kind have been published by Mr. Key, Dr. Houston, Mr. Liston, and others, who have shown the absence of the symptoms before enumerated, if it remains almost entirely in this situation, together with the new stethoscopic signs of its presence in the bronchus, viz., the freedom of the larynx from disease, and the occasional or permanent cessation of respiration in the lung of the affected side.

3. If the foreign body is actually fixed within the vocal cords, instant and sudden death has usually been the immediate result; whether it has been impacted in this situation at once, or has first moved freely within the trachea, and has been subsequently fixed in the glottis during a fit of coughing.

4. If it is fixed within the larynx in some other situation, as in the ventricles, without causing immediately fatal effects, a foreign body is yet generally said to occasion much distress and danger. 'It will produce,' it is said by Dr. Stokes, 'more or less violent and incessant attacks of cough and dyspnoea in which the lungs are found, on auscultation, to be sound, and the larynx to be the seat of

the constriction ; the permanency of which, together with the history, will point out the nature of the case.' 'It may happen,' says Mr. Porter, 'that if the body be round and polished and small, it shall occasion no symptoms of distress, except the *cough*, and the *difficulty of breathing*, and the patient may exist for a long time without the occurrence of those morbid actions which render the accident certainly fatal.'

5. "But," says Mr. Hawkins, "that a foreign body should be fixed in the larynx *below* the glottis, and that the symptoms should be much modified by this position, does not appear to have been noticed by writers upon this subject ; except that the cough, in cases of foreign bodies within the air-tube, arising from the direct irritation of the glottis, the absence of this symptom, it has been remarked, may be considered as a presumptive proof that the foreign body is fixed somewhere in the tube. Even this remark, however requires some correction, since it must be recollected that the fatal effects upon the *lungs* may occasion cough, although without so much distress, as in cough produced by direct irritation of the glottis. The part of the larynx immediately below the glottis is not enumerated by any writer, as one of the situations in which a fixed foreign body is to be looked for, although some distinctions have been attempted to be drawn of the symptoms likely to be occasioned by the different situations I have before alluded to, viz., the glottis itself, or one of the ventricles of the larynx, or the tracheal tube, or one of the bronchi." 105.

Mr. Hawkins has only been enabled to find two cases similar, though not precisely like his own. These he refers to, and concludes by remarking :— "It appears then that in three cases in which a foreign body was fixed in the situation of the cricoid cartilage below the glottis, the severe paroxysms of coughing, which are invariably looked for as evidence of the presence of a foreign body, (but which really belong essentially to its presence in other parts of the tube,) were entirely absent in two, and were mild in the third, so as to lead the surgeon to believe they could not arise from the entrance of the pebble, as the child asserted, and were afterwards entirely absent in the last month of her life ;—that even the voice was unaffected in two of the cases, although hoarse in the third case ;—but that in all three cases there was soreness and uneasiness, in the part where the foreign body was fixed, a *noise* in inspiration or expiration, or in both, from the mechanical effect of the intruding substance, (mistaken indeed for croup in one of them,) and in all, the *patient asserted* that something had been *swallowed*.

Where such circumstances as these are present to guide the surgeon, I conceive he is imperatively called upon to operate without much delay, since out of the only three cases, with which I am acquainted, in which the foreign body has been thus lodged and fixed near the glottis, two were fatal ; one within sixty hours, by the immediate effects upon the lungs, though without any other symptom than in my own case ; the other at a later period, by the slower influence of inflammation ; while in my patient a more fortunate result was met with, in consequence, it cannot be doubted, of the removal of the foreign body, at an early period, by an operation, which is seldom very difficult, except in very young children, and perhaps is never attended with any important risk."

IX. HISTORY OF A CASE IN WHICH TRACHEOTOMY WAS PERFORMED ; WITH OBSERVATIONS. By BENJAMIN TRAVERS, Jun. Esq.

We are glad to perceive that Mr. Travers, jun., is following in the steps

of his able father. Similar zeal in the prosecution of surgical science will lead, we cannot doubt, to similar eminence, a prize of no mean value to the most ambitious man.

Case.—A robust girl, aged six years, the daughter of a farmer residing near Eye in Suffolk, whilst sitting upon some straw in the yard, was suddenly thrown backwards by a pig concealed beneath the heap. She was eating cherries at the moment, and was immediately seized with a violent fit of choking, and every symptom of impending suffocation. This condition lasted an hour and then she fell asleep. The accident occurred about four o'clock in the afternoon of Friday, July 19th. She was seen an hour afterwards by Mr. Vincent, surgeon, of Rickinghall. Being awakened by slight cough, some emetic and purgative medicine was given, but no stone was detected in the matters rejected from the stomach and bowels.

She slept well during the ensuing night, but on the 20th, had some spasmodic pain in the chest. At seven a.m. of the 21st, there being dyspnoea and inflammatory symptoms, some blood was drawn and calomel and opium were given.

At four p.m. of the 22d, she had violent convulsive seizure with cough, small quick pulse, a livid surface, suffused eye, and every sign of threatened suffocation. The spasm subsided in two hours, when she was tranquil till the 23d, when she had another fit. Cough frequent and sonorous. On the 25th there was another paroxysm, after which there was no disorder except occasional cough. The child remained well till the 1st of August when the spasmodic attack returned with great violence, lasting two hours. The seizure now recurred daily, varying as to degree and duration.

Mr. Travers first visited the child in company with Mr. Vincent on the evening of Wednesday the 7th instant. She had just recovered from a severe fit of cough, and was sleeping uneasily. When roused, her breathing was laboured and stridulous, pulse small and hurried, countenance anxious and suffused; there were frequent paroxysms of croupy cough, attended by great restlessness, and that peculiar grasping of the throat before noticed. The temperature was sustained. The attacks were now more frequent, and the consequent exhaustion more marked.

Mr. Travers lost no time in performing the operation. With a little difficulty, he succeeded in dividing vertically three rings of the trachea with the connecting membrane midway between the isthmus of the thyroid gland and the top of the sternum. By inclining the head forward, an oval aperture was produced, of sufficient extent to have permitted the escape of the stone, had it been free to move in the canal. The breathing became tranquil, and the cough ceased. Mr. Travers determined to ascertain whether the larynx was obstructed. He pushed a silver catheter fairly through the glottis, which he ascertained by passing his fore-finger over the base of the tongue, so as to touch the apex of the instrument in that situation.

The gums were made sore—towards the close of September the wound healed—in the beginning of October the child coughed incessantly, and had night sweats, with loss of strength and appetite. Mr. Vincent still suspected the presence of a stone, and on October 23d, his suspicion was verified by the ejection of a stone, together with a table-spoonful of pus, during

a violent paroxysm of cough. From this time the cough never returned, and the general health was soon re-established.

Mr. Travers makes some very pertinent and useful observations on the case, but having already, in our notice of the preceding paper, devoted much space to the subject, we are constrained to pass them over with this simple commendation.

X.—MEMOIRS ON SOME PRINCIPLES OF THE PATHOLOGY OF THE NERVOUS SYSTEM
By MARSHALL HALL, M.D. &c. &c.

Dr. Marshall Hall has done and is doing good service to physiology.—There are few persons, we think, possessed of a more untiring zeal in the advancement of science than himself. To say less would be injustice.

The SECOND MEMOIR is on:—

THE MORBID REFLEX AND RETROGRADE ACTIONS OF THE SPINAL MARROW.

He first treats of—

The Reflex Actions.—Dr. Hall begins by observing that Haller, Bichat, and Müller distinctly state that the *vis nervosa* acts in *one* direction only, viz. that *from* trunk to branch, or *from* the nervous centres *towards* those parts of the muscular system placed in relation with them. But Dr. Hall observes, that it appeared to him that, when he had established that the reflex actions did not depend upon sensation and volition, but upon some other principle of the animal economy, the only known principle which remained, and which could be the probable agent in these actions, was the *vis nervosa*. He resolved, therefore, to institute a new series of experiments in order to determine the question, whether the *vis nervosa* were susceptible of other and unsuspected modes of action. These experiments consist in denuding and stimulating the lateral nerves in the decapitated turtle. It results from them, in reference to the *vis nervosa*:—

1. That it acts in *direct* lines *along* the spinal marrow, and *from* the trunks to the branches of the nerves, and to the muscles they supply,—according to the law laid down by Haller, Bichat, and Professor Müller.

2. That it acts in *reflex* directions *to* and *from* the spinal marrow; that is, *from* peripheral, cutaneous, and mucous surfaces, *through* the spinal marrow, and to the co-ordinated muscles, according to a newly-discovered law; and, as will be seen hereafter.

3. That it acts in a *retrograde* direction along the spinal marrow.

Now, under what circumstances, are reflex actions most apparent in the human frame? Dr. Hall can state that, in order that they may be very apparent, it is essential—

1. That the interference of *volition* should be removed;

2. That the *vis nervosa* and the *vis muscularis* should be unimpaired, not to say augmented, and

3. That the *reflex nervous arcs* should be uninterrupted.

The interference of volition with some of the phenomena of the reflex function is obvious from some of the phenomena of sleep and of comatose

and paralytic affections. Gently touch the palm of the hand of a sleeping child, it grasps the finger—do the same thing when the child wakes, it does not. Again, in cerebral paralysis, the reflex actions are most observed when the paralysis is most complete.

"The first effect of a violent experiment or accident seems to be to suspend the *vis nervosa*, the *vis muscularis*, or both. It is accordingly observed that immediately after the division of the spinal marrow, in an experiment, or immediately after injury sustained by the same organ in the human subject, by a fall or other accident, the reflex actions subsequently developed and manifested most clearly, are not observed.

The nervous and muscular powers are gradually restored from this suspension as the effect of shock, and, at a still more remote period, even acquire an abnormal degree of intensity. The phenomena dependent on them are augmented proportionately. The same remark is still more true in regard to cases in which the *vis nervosa* is morbidly augmented by disease, as in tetanus, hydrophobia, certain affections of the spinal marrow, in the effects of strychnine, &c. In these latter cases the slightest cause of excitement is reflected with terrific energy upon the appropriate parts of the muscular system.

3. Lastly, it is essential that the reflex nervous arcs should be entire. It has been observed that in some cases of paraplegia the reflex actions are present, in others absent. A slight knowledge of the anatomy of the spinal column is sufficient to explain this apparent discrepancy. If the disease be seated within the *cervical* or *dorsal* vertebræ, the spinal marrow in this part is affected, but a portion below may remain free from the influence of the disease; the reflex arc which involves this portion may, therefore, be entire, and the reflex actions will be observed. If, on the contrary, the disease be situated within the *lumbar* vertebræ, the cauda equina is affected, the centre of every reflex arc is excluded, and all the reflex actions will be absent." 126.

Dr. Hall gives a table of the nervous arcs through which reflex actions take place—a table which we insert.

ANATOMY OF THE TRUE SPINAL SYSTEM.

I. The Incident Motor Branches.

1. The Trifacial arising from—

1. The Eye-lashes.
2. The Alæ Nasi.
3. The Nostrils.
4. The Fauces.
5. The Face.

2. The Pneumogastric, from—

1. The Pharynx.
2. The Larynx.
3. The Bronchia.
4. The Cardia, — Kidney, and Liver.

3. The Posterior Spinal, arising from—

1. The General Surface.
2. The Glans Penis or Clitoridis.
3. The Anus.
4. The Cervix Vesicæ.
5. The Cervix Uteri.
6. The Extremities.

III. The Reflex, Motor Branches.

1. The Trochlearis } Oculi.
2. The Abducens }

3. The minor portion of the Fifth.

4. The Facial, distributed to

1. The Orbicularis.
2. The Levator Alæ Nasi.

5. The Pneumogastric or its accessory

1. The Pharyngeal.
2. The Œsophageal and Cardiac.
3. The Laryngeal.
4. The Bronchial, &c.

6. The Myo-glossal.

7. The Spinal, distributed to the

1. Diaphragm, and to
2. The Intercostal and } Muscles.
3. The Abdominal }

8. The Sacral, distributed to

1. The Sphincters.
2. The Expulsors, the Ejaculators, the Fallopian Tubes, Uterus, &c.
3. The Extremities.

II. The True Medulla Oblongata and Medulla Spinalis, the Centre of the System.

Dr. Hall next proceeds to make some observations on the diseases in which the reflex phenomena are observed, and to give a series of cases in illustration.

1. *Diseases of the Head*.—In the coma of apoplexy, of epilepsy, and of hydrocephalus, we observe, according to the *degree* of the affection, the diminution of the cerebral, and of the cerebral and true spinal functions. The test is supplied by the eyelids. In the slighter forms of coma, the eyelids are frequently but partially closed, yet they close perfectly on touching the eye-lashes; in the severer forms of this affection, not only the cerebrum, but the medulla oblongata, has its powers impaired, and the eyelids do not close although touched.

2. *Of Hemiplegia*.—The reflex actions are not less observed in cases of hemiplegia than in cases of paraplegia; but as they are, in general, more obvious the more complete the paralysis, and as the paralysis of hemiplegia is, in general, less complete than that of paraplegia, they have been less observed in the former affections.

Dr. Hall gives several instances of this. One only need be cited

Case.—"Mr. F., aged about fifty-five, was seized, three months ago, with apoplectic symptoms, which left pretty complete hemiplegia. At first there was a little stertor and a little dysphagia; but these symptoms ceased with the apoplectic state, the former at once, the latter a little more tardily. There was also slight enuresis for several days. On tickling the sole of the foot, or pinching the skin, or pulling a hair of the leg, and on applying a spoon just taken out of hot or cold water, there was distinct sudden movements of the leg. The same thing occurred in regard to the arm, but in a less marked degree. On first applying galvanism, the paralytic arm was least affected: the effect I suppose, of the shock of the disease; afterwards the paralytic arm was most moved, as in other similar cases. On the same principle, the effect of emotion, as laughter, was at the first more observed on the healthy than on the paralytic side of the face; more remotely, the equilibrium of the countenance, under the influence of laughter, was restored or nearly so. At this time, the arm, and especially the hand, are paralysed to voluntary motion, but readily agitated by emotion, and sudden or energetic respiratory efforts, and constantly contracted as by a spring, the arm towards the trunk of the body, the fingers towards the palm of the hand; and, lastly, more agitated by the influence of galvanism than the unaffected limb. The voluntary power of the arm is much less restored than that of the leg, in which the phenomena just enumerated are, comparatively, absent," 137.

3. *Of Paraplegia*.—Dr. Hall details also many cases of the existence of the reflex actions in paraplegia. One will be a sample.

Case.—A girl, about 15 years of age, who was a patient of Mr. Crosse, at the Norfolk and Norwich Hospital, a few years since, was affected with angular curvature of the spine, producing insensibility and paralysis of the lower extremities. On tickling the *soles of her feet*, which as an experiment was often done, the legs were immediately slightly retracted, although the patient said she felt nothing; it was further remarked that on touching the *other parts of the feet or the legs*, in the same manner, no effect was produced.

4. *Tetanus; Hydrophobia; Effects of Strychnine.*—Dr. Hall observes that—"as in cerebral paralysis we have augmented irritability of the muscular fibre, or of the *vis insita*, in tetanus and hydrophobia we have the *vis nervosa* morbidly augmented, but in an infinitely greater degree.

The slightest external stimulus is sufficient to excite reflex actions in their most terrific forms

What is remarkable is, that it is precisely the functions of the orifices and sphincters, of the ingestors and egestors, which are most affected in these formidable diseases; and, most of all, the larynx, the pharynx, the organs of respiration, and the rectum.

The remarks which have been made relative to the condition of the reflex function in tetanus and hydrophobia, apply equally to that artificial tetanus induced by strychnine. In a report of La Charité, of Berlin, drawn up by Dr. Köhler, it is observed that, "in some individuals, the sensibility to external impressions, under the influence of strychnine, was so great, that they broke out into an almost uncontrollable fit of laughter on being touched with the finger."

5. *Undue Excitability.*—Instead of paraplegia, and the other forms of paralysis, arising from disease of the spinal marrow, we have occasionally undue excitability. Dr. Hall remarks that it is still a question how far the spinal marrow is primarily or organically affected in these cases, which he thinks quite distinct from those of common paraplegia.

Case.—In one case there were movements of the fingers somewhat like those seen in chorea, whilst the muscles of the legs were spasmodically contracted; the patient was as incapacitated for muscular exertion as in paraplegia. The skin was so susceptible to impressions in certain parts of the surface, that the patient was affected with a sort of general emprosthotonic spasm, with a slight sob whenever the bedclothes, for instance, were drawn over his chest, and still more especially when the penis was accidentally touched in a similar manner. Similar effects were observed on applying the pure potassa to establish an issue along the spine. The legs were drawn upwards whenever the sole of the foot first touched the cold floor on rising in the morning.

6. *Peculiar Dysphagia.*—"From an undue excito-motory action, the pharynx seizes some solid portion of what is attempted to be swallowed, and this is afterwards returned by a peculiar effort, for which I know of no designation but that of a forcible hawking. A pill, though taken with a large draught of water, is arrested at the upper part of the pharynx. A little of the core of apple, or of the gristle of meat, is seized and retained in the same manner, the rest being duly swallowed. Sometimes large portions of food are thus retained. When the pharynx is thus occupied by a portion of food, it is necessary to remove it either by swallowing some fluid, or by the effort just described. It may not be without interest to add, that I am myself affected with this singular kind of dysphagia."

7. *Morbid Action of the Rectum, and Bladder, and of the Sphincters.*—There is, says Dr. Hall, a peculiar affection of the rectum and bladder in

some nervous affections, of which the following experiment affords both the type and illustration; if, in a turtle, after the removal of the tail and the posterior extremities, with the rectum, and of course, with a portion of the spinal marrow, water be forced into the intestine by means of Read's syringe, both the cloaca and the bladder are fully distended before any part of the fluid escapes through the sphincter; which it then does only on the use of much force, and by jerks. If, when the cloaca is distended, the integuments over it are stimulated, the water is propelled to a considerable distance.

When the rectum or bladder is distended, the patient feels a sudden call, and the action of the expulsors is so energetic, or the power of the sphincters is so diminished, that unless the call can be promptly obeyed the fæces or urine escape.

In tenesmus and strangury, the sphincter of the rectum and of the bladder is excited to undue contraction respectively. A ligature applied to hæmorrhoids not uncommonly induces spasmodic action of the cervix vesicæ and retention of urine. In one case, calculus of the bulb of the urethra induced spasmodic stricture of the sphincter ani. All examples of morbid reflex action.

8. *Localization of Action of certain Remedies.*—Strychnine acts upon the glottis, cantharides on the neck of the bladder, aloes on the rectum, the secale cornutum on the uterus,—all organs specially under the influence of the excito-motory power and reflex function of the spinal marrow.

9. *Excitants of the Reflex Action.*—On the expulsion of the fœtus, and by the contact of the atmospheric air with the minute distributions of the incident nerves of the excito-motory system, that the functions of ingestion and egestion first commence.

It is, doubtless, from the impression of the atmospheric air on the trifacial and spinal nerves, distributed upon the surface of the face and body, that the first inspiration is excited.

The influence of cold water dashed on the face, and the influence of the diffused contact of the cold bath, in exciting sudden sobbing acts of inspiration, are well known.

The same contact of cold air which excites the first inspiration, also excites the first acts of expulsion of the fæces and urine. This effect is also seen in the late periods of existence. The cold bath induces the same effect. The uterus is well known to be very susceptible of the influence of cold too—the catamenia being checked, or uterine contraction excited by it. It is interesting, says Dr. Hall, to observe the influence of the same cause in disease. None are more remarkable instances of this than the phenomena observed in the coma of epilepsy and apoplexy. The medulla oblongata being compressed, together with the other contents of the cranium, the influence of dashing cold water on the face way be absolutely null; on taking off that pressure by blood-letting, the susceptibility to the influence is again restored; it becomes a measure, even, of the diminished compression.

There are other influences of cold, which must not be passed over unnoticed. Free exposure of the face to the cold breeze is the most effectual remedy in sickness, and affords manifest relief in asthma.

As to other excitants of the reflex functions, we need only call to mind

the simplest facts. The nipple or the finger, introduced between the lips of the new-born, or even the anencephalous, fœtus, immediately excites the act of sucking; the mere introduction of the enema pipe into the rectum of an infant, equally excites the action of the rectum. The irritation of a few grains of common salt, applied to the border of the sphincter ani, will induce the premature expulsion of an egg in a common fowl.*

Food is the natural excitator of the pharynx, œsophagus, and cardia—the fœces and urine of the expulsors about the rectum and of the bladder.

Some internal textures are, however, capable of transmitting the influence of excitants. I have seen the limbs of the decapitated turtle moved energetically on dividing internal tissues; and I have known spasmodic affections induced by disease of similar internal tissues.

“It still remains for us to trace the influence of excitants of this function in some more hidden cases. It is almost certain that the gall-ducts, the ureters, and other excretory canals, are endowed both with incident and excitant, and with reflex and motor, nerves. The passage of a biliary or urinary calculus excites vomiting; exposure to cold, a loaded intestine, certain passions, and in infants mere dentition will, on the other hand, arrest the flow of bile and induce icterus.

The influence of the excitants of this system of actions, considered as *remedies* is little known. One of the most interesting examples of this kind is that of the application of cold to the face and to the general surface, in some cases of suspended animation. As a remedy in the cases of the still-born fœtus and of drowning, the sudden contact of cold water is most important. I have already alluded to the use and influence of the cold water douche in cases of hæmorrhage from inaction of the uterus.” 157.

10. *Retrograde Action in Spinal Disease.*—This subject is considered by our author to be involved in obscurity. It has been observed, he says, that an irritation of the middle part of the spinal marrow, below the origin of the brachial plexus, induces in some decapitated animals, and especially the cold-blooded and the very young of the warm-blooded, distinct movements of the anterior extremities.

“I removed the head of a young turtle; on pinching and galvanizing the lower extremity of the medulla oblongata, there was an excited act of inspiration. The same event occurred on stimulating the nostril, the intra-maxillary or palatine fringes, and the internal part of the larynx.

I then laid bare the middle portion of the spinal marrow by removing part of the shell. On pinching or galvanizing this, *both* the anterior and posterior fins were moved.

I took a frog, separated the head, and divided the spinal marrow low in the back; I then stimulated the lower end of the upper portion of the spinal marrow with the forceps; the anterior extremities moved in the most remarkable manner:—they were gently raised, without being affected with the *twitchings* seen in the inferior extremities when the upper part of the lower half of the divided spinal marrow was stimulated.

I was next anxious to perform these experiments on an animal of warm blood. I chose for this purpose a rabbit of six days old.

*The same effect is said to have been produced by the *secale cornutum*, in an experiment performed by M. Velpeau.

I first removed the head. I then stimulated the lower end of the divided medulla. There was an immediate act of *gasping*; I then divided the spine in the back, and stimulated the lower end of this middle portion of the spinal marrow; the anterior extremities were immediately moved." 159.

Dr. Hall, in reference to the question, whether retrograde actions of the spinal marrow take place in disease, cites three cases which, however, do not seem to us very satisfactory. We therefore pass them by.

Referring to these cases, and to the subject that they are intended to illustrate, Dr. Hall observes:

"It is obvious that the question agitated in this place is one of great moment in the diagnosis of diseases of the spine; for if there be in disease or accident, retrograde influences of the spinal marrow, we must not always conclude that the disease or injury is situated *above* the origin of the nerves affected. It is equally obvious that the whole subject needs new and accurate observation.

I trust that one advantage will arise from the brief remarks which have been made in this communication, viz., that in every case of cerebral or spinal disease, and disease of the nerves in their course, the condition of the reflex actions, and of the retrograde influences of the spinal marrow and nerves, will henceforth be carefully examined. The first of these subjects has already made great progress; the second has scarcely been touched upon in medical writings. I will venture to suggest that cases of caries of the vertebræ appear to afford the most probable example of diseases *limited* to a given region of the spinal marrow, and therefore the best for the latter kind of inquiry. They afford examples of *irritation* before morbid processes have induced *disorganization*. The questions to be considered are two. 1. Is there paralysis? 2. Is there spasmodic action, in parts receiving their nerves from portions of the spinal marrow *above* the seat of the disease." 163.

And Dr. Hall concludes by submitting to the Society a certain number of propositions—inferences from the facts stated or observations made.

1. It is proved by the series of facts which have been observed in the human subject, that the excito-motory reflex actions are independent of sensation and volition, however they may be accompanied by sensation, or influenced by volition, in the perfect animal.

2. It is proved as a consequence, that the reflex actions are dependent on another principle of the nervous system; and it is proved by a series of experiments, that this principle is the *vis nervosa* of Haller, acting according to a new reflex law.

3. The phenomena of the excito-motory reflex actions are obvious in cases of paralysis, in proportion as that paralysis is more complete; they are therefore, more observable in paraplegia, than in hemiplegia, in general, but in each of these according to their intensity; they are therefore not only independent of sensation and volition, but inversely as these, frequently disappearing as these return.

4. In accidents, as in experiments, the excited reflex actions are not immediately observed, but are manifested only after the lapse of certain intervals of time; it is plain therefore, that the first influence of shock, is to diminish the excito-motory power; and this may remain until the patient falls a prey to the accident; as in the case noticed in Dr. W. Budd's paper.

5. It is observed that at a subsequent period, in more favorable cases, the excito-motory power is not only restored to its normal condition, but morbidly augmented.

6. This is especially observed in certain diseases, as tetanus, the effects of strychnine, &c.

7. The reflex arcs of the nervous system will be imperfect in cases of disease or injury of the lumbar or other regions, as in the case noticed in Dr. W. Budd's paper, and the reflex actions will consequently be absent; a fact which affords, in its turn, an important source of diagnosis, as to the seat of the disease.

8. In certain cerebral affections attended by coma, the presence or absence of reflex actions, in the eyelids especially, gives us an index of the degree of severity of the disease.

9. Certain diseases, as hydrophobia, epilepsy, hysteria, and certain remedies, as strychnine, cantharides, &c., not only induce augmented excitability, but manifest their effects precisely upon the organs which are, physiologically, under the influence and dominion of the excito-motory power.

10. There are new forms of disease of the true spinal functions, not hitherto described, such as the dysphagia, the peculiar action of the rectum, &c. which have been briefly noticed.

11. Certain parts, as the sides of the thorax, the soles of the feet, &c., are more susceptible of the excitement in question than others.

12. Dr. W. Budd has very justly observed, that in many cases of violent reflex, and even convulsive actions, there was no sense of fatigue, and little emaciation of the muscles. In fact, fatigue is a cerebral state, and cannot be expected to occur in the cases in which the reflex actions are most observed; and emaciation is most obvious in spinal paralysis, in which the reflex arcs being interrupted, the reflex actions are also precluded from taking place. Fatigue is *felt* severely after violent attacks of epilepsy and other spasmodic diseases, in which the cerebral functions are afterwards restored.

MEMOIRS ON SOME PRINCIPLES OF PATHOLOGY IN THE NERVOUS SYSTEM. By MARSHALL HALL, M. D.

MEMOIR III.—ON THE DISTINCT INFLUENCE OF VOLITION, OF EMOTION, AND OF THE *VIS NERVOSA*.

Dr. Hall observes that there are *three* causes or principles of muscular motion in the animal economy, besides the motor contractile power in the nervo-muscular fibre itself; viz., *volition*, *emotion*, and the direct and reflex actions of the *vis nervosa*. He first illustrates that of *volition*, but it does not appear necessary to follow him there. He next passes to that of *emotion*. He dwells on its frequency in man, its force, and its effects in inducing and complicating diseases of the nervous system.

In healthy circumstances, he says, the influence of emotion is diminished or counteracted by that of volition. But not only does emotion remain in connexion with the hemiplegic limb when sensation and volition are severed from it, but that emotion exerts its influence precisely upon those muscular organs which are under the influence of the *vis nervosa*, or excito-motory power: viz., the orifices and sphincters, the agents of ingestion and egestion; and as the *vis nervosa* acts *directly* upon certain internal organs, as well as

reflectively upon those just mentioned, we find the heart, the intestinal canal, the organs of secretion, &c., especially under the influence of emotion.

"Sensation and volition thus are seated in the cerebrum and its prolongations; emotion in the true spinal and the ganglionic systems. It is this distinct view of the subject to which I wish to draw the attention of the physiologist and pathologist." 173.

"Another form," says Dr. Hall, "of muscular action, if not of emotion, is that seen in the muscular system in general, and designated *tone*; the effect, I believe, of the constant agency of the *vis nervosa*. Far less obvious during the healthy condition of the system, it is made very manifest in certain circumstances of disease, and on the first cessation of the animal functions in death. When the influence of volition are withdrawn in hemiplegia, the hand and arm become much and permanently contracted. The influence of the same power is observed immediately after death, in the phenomenon termed cadaveric rigidity." 174.

With Dr. Hall's great ingenuity and penetration, we cannot help suspecting a tendency to rapid generalization. For example, *cadaveric stiffening* is at once decided to be *tone*, although there are many strong arguments, to say the least, against it. And the history of the doctrine of the nervous system must teach circumspection, when we come to reason on such principles as emotion. But this *en passant*.

Dr. Hall proceeds to pass in review the various diseases of the nervous system calculated to illustrate the questions before him.

1. *Of the Diseases of the Cerebral System*.—Dr. Hall reverts to hemiplegia, which dissects and severs, as it were, the cerebral from the true spinal system, volition from emotion and the *vis nervosa*.

After several observations, Dr. Hall concludes that the effect of hemiplegia is to paralyze the power of volition on the opposite side of the body, whilst the influence of emotion on this side remains. The seat, the source of these, must therefore be different. Those of the former are higher in the cerebrum, those of the latter lower down,—below the disease, probably in the medulla oblongata. Volition acts along fibres which decussate and effect the opposite side of the frame; emotion, like inspiration, has probably its course along another set of fibres, which do *not* decussate.

We may conclude, then, that hemiplegia severs the different motor powers from each other, and demonstrates their individual and separate existence: the influence of volition is cut off; that of emotion is occasionally, that of the *vis nervosa* constantly, energetic. Paralysis in regard to volition; agitation on occasions of emotion; tonic contraction from the constant action of the *vis nervosa*; such are the facts presented to our observation and consideration.

2. *Of the Diseases of the True Spinal System*.—Tetanus may be taken as the purest example of disease of the true spinal system. Whilst it spares the cerebrum, and with it the intellectual functions, it affects all those organs and actions of ingestion and of egestion, and, in a word, of the excito-motory system, which are untouched by hemiplegia. Deglutition, respiration, defæcation, are variously impeded.

Traumatic tetanus, proceeds Dr. Hall, being a series of morbid reflex

actions, affords the type of affections of the system of incident and reflex nerves, and of their combiner, the true spinal marrow. The morbid influence is also retrograde as well as reflex. In disease originating in the spinal centre, the effect is usually less general, because retrograde; but it is not less marked because more limited.

Still more limited, in its effects, is disease seated in the reflex or muscular nerves. Such disease is seen in the cases of spasmodic tic and torticollis. Spasmodic tic frequently arises from the influence of exposure to cold; the first effect is generally paralysis; the second, tonic or clonic spasm.

Passing over some cases we may cite Dr. Hall's conclusions: namely—that the seat of volition is the cerebrum, and that its action is along the fibres which *decussate* in the medulla oblongata, and that the seat of emotion is below that of volition, and that it acts along fibres which probably do *not* decussate. In these respects the effects of emotion resemble those of respiration, as seen in yawning, and this function is known to act in a direct manner, from the medulla oblongata not decussating. The same remark, and for the same reasons, may be made in regard to the tonic action of the *vis nervosa*.

Volition has an object, an aim. Emotion and the *vis nervosa*, however subdued to certain laws impressed by the Creator, and destined to special purposes, are aimless on the part of the individual, nay, frequently *opposed* to his volition.

According to the views of M. Flourens, and according to the emphatic expression of Professor Müller, volition acts upon the fibres of the medulla oblongata, as the finger upon the keys of a harpsichord. So do emotion and the *vis nervosa*. Where then is the difference of the effect produced? These agents act upon different instruments!—Volition along the intravertebral chord of cerebral nerves; emotion, and the *vis nervosa*, upon the fibres of the true spinal marrow.

These memoirs are valuable to the last degree.

ON THE PRESENCE OF SULPHUR IN CYSTIC OXYDE AND AN ACCOUNT OF A CYSTIC OXYDE CALCULUS, IN THE MUSEUM OF UNIVERSITY COLLEGE, LONDON.
By HENRY BENCE JONES, B.A. &c.

Mr. Jones is a young gentleman who has devoted some attention to organic chemistry, and is likely to excel in it. The object of his present paper is to corroborate a statement which was first announced by M. Baudrimont in France, and, subsequently, confirmed by M. Thaulow, in Germany,—that cystic oxyde calculi contain sulphur in considerable quantity.

Mr. Jones identified a cystic oxyde calculus, of considerable size, in the museum of University College, London. Passing over a very scientific account of it, for which we must refer our readers to the paper itself, we may state what was made out by Mr. Jones in relation to the sulphur.

The mode, he informs us, recommended by Liebig for obtaining pure cystic oxyde was followed in examining the calculus with regard to the presence of sulphur. Of ten grains of the calculus, treated with ammonia, about nine grains were dissolved; which is the proportion of cystic oxyde; the remainder being animal matter and phosphate of lime. On the spon-

taneous evaporation of the ammoniacal solution, crystals were formed, of which five grains were treated with nitric acid free from sulphuric; violent action ensued, after the cessation of which, some crystals of pure nitrate of potash were dropped into the solution, and the whole, after being evaporated to dryness, was gently ignited in a platinum crucible. The white fused mass resulting was alkaline to test paper, and its solution neutralized with nitric acid, gave on the addition of nitrate of baryta an abundant white precipitate, insoluble in the last named acid. This precipitate, collected on a filter, washed, dried, and ignited, weighed 6.94 grains, corresponding to .9576 of sulphur, or above 19 per cent. This is considerably less than the amount given by M. Thaulow, but from the smallness of the quantity operated upon, from its having been examined as crystallized from an ammoniacal solution, and from other sources of error, the result must by no means be considered as throwing any doubt on the correctness of Thaulow's analysis, while it confirms the existence of a large quantity of sulphur in cystic oxyde. Whether the sulphur be variable in quantity, or be sometimes altogether wanting, future observation alone can determine.

We have completed a pretty close account of the first half of the Society's volume. In our next number we shall return to, and conclude it, and we think our readers will agree with us in our high estimate of its value.

A PRACTICAL WORK ON THE DISEASES OF THE EYE, AND THEIR TREATMENT, MEDICALLY, TOPICALLY, AND BY OPERATION. By Frederick Tyrrell, &c. &c.

[Continued.]

IN our last number, we introduced this excellent practical work to our readers, and brought under their notice its author's opinions and practice in reference to the ophthalmiæ. We shall now take up the volume again, and glean here and there the practical hints which abound in it. For, as we observed on a former occasion, *practical merit* is its characteristic.

We first turn to some morbid conditions of the conjunctiva, not coming within the class of the positive ophthalmiæ.

Polypi of the Conjunctiva, may be elevated by a pair of forceps, and separated from the conjunctiva, by means of the scissors, or knife; after which, the nitrate of silver, in substance, should be applied to the surface of the wound, and weak astringent lotions frequently used.

Pterygium.—Membranous, or fleshy, it appears to result from continued chronic inflammation—is frequent in warm climates, rare in this or colder ones.

As long as the pterygium does not extend to the surface of the cornea, local stimuli and astringents are best for it. If the surface of the cornea has become implicated, nothing but an operation is of service.

"A slender bladed knife should be passed between the pterygium and the sclerotic coat, having the cutting edge towards the cornea; the pterygium should then be separated from the sclerotic, as far as the margin of this transparent structure: in which situation the edge of the knife should be made to divide the morbid texture, so as to leave the portion in connexion with the cornea untouched; the flap thus formed over the sclerotic, should be elevated by a pair of forceps, and the separation of the pterygium from the globe completed, as far as its base or outer attachment, when it should be cut off either with the knife or scissors, close to the sound membrane; a little care is afterwards requisite to prevent an inflammatory process, and a reproduction of the disease; and I have usually found the simple astringents, as the solution of alum and of the acetate of lead, sufficient for this purpose, keeping the patient perfectly quiet, until the healing process has been completed." 189.

Soon after the operation, the portion of pterygium left over the cornea gradually disappears. Should the operator have incautiously excised it, an opaque deposit subsequently is developed.

Fræna.—Uniting opposed surfaces of the conjunctiva, common as they are after the introduction of lime into the eye, would seem to be given up by Mr. Tyrrell as a bad job.

"For such disease, I believe there is little that can be done, either by medical or surgical aid;—after the occurrence of the injury, which I have described as giving rise to this affection, I have repeatedly tried, by the greatest care and attention, to prevent the formation of fræna; and although, in some instances, I have succeeded in preventing the immediate inosculation of the granulations, yet I have never been able to prevent the formation of a frænium; it has appeared to me, that a contraction of the cicatrix takes place after the healing process is completed, similar to that we so frequently see in the extensive cicatrices, formed after burn of the integuments. I have, with the utmost pains and patience, effected the removal of such bands, and watched the after process of cure; but am now convinced, after repeated trials, that such operations are worse than useless, as they cannot be accomplished without severe suffering, and do not eventually, at all benefit the patient. In two cases, after excising the band or frænium, I kept a very thin and smooth piece of silver constantly between the eyelid and globe, so as effectually to prevent inosculation of granulations, as the surfaces healed. When perfectly healed, much good appeared to have been effected; but, in less than six months, contraction had taken place of the new-formed matter, and fræna were developed as bad as, or worse than those which I had removed." 193.

Ecchymoses of the Conjunctiva.—When the extravasation is extensive, or the action of the absorbents very tardy, Mr. Tyrrell has recourse to a light poultice, made by mixing some of the black-briony root, scraped finely with a little crumb of bread. This is placed in a muslin bag, over the palpebræ, for several hours together; and, usually, it has an excellent effect in promoting the action of the absorbent vessels.

Escharotic Substances in the Eye.—Immediately after the introduction of lime or mortar into the eye, great relief will be obtained by the free ablation of the organ with weak vinegar and water, in the proportion of about a tea-spoonful of the former, to half a pint of the latter. It should be used warm, and if the means are at hand, by injecting a portion of it into the eye, its beneficial effects will be increased. Otherwise, some of the solu-

tion may be dropped into the eye. The good effects of the application result from its chemical action on the lime, which destroys its caustic property and renders it soluble, so that it no longer acts as an irritant. After injury from acids, some alkaline preparation, in solution, will be most serviceable, as a solution of the carbonate of soda or potash; or, in case such are not to be readily got at, common soap and water will prove a good substitute. These applications will be most serviceable if injected into the eye or dropped freely upon the conjunctiva.

When heated metal has occasioned the mischief, all that can be done immediately, is to remove the particles that may adhere to the conjunctival surface, or lodge beneath the eyelids.

Subsequently, the treatment must, in all cases, be similar, and such as is calculated to moderate excessive inflammation.

AFFECTIONS OF THE CORNEA.

1. *Corneitis*.—Mr. Tyrrell's description of this is very good. But it is not requisite to transcribe it. We may observe, however, that functional disturbance materially affects it, and more particularly deficient cutaneous action. Mr. T. has also sometimes found, in young and delicate females, that error in the periodical uterine secretion, has had an important effect over the corneitis. It is also modified by the condition of general power.

In the treatment, he recommends the influence of mercury, but gently administered, and closely watched. He would begin usually, in children, with one grain of mercury with chalk, and generally combine with it two or three grains of the compound powder of antimony. The frequency of the dose must depend on the power of the patient, and it may be necessary to intermit it. Besides the exhibition of the mercurial, in most instances, it is necessary to give some tonic remedy; and the selection of this, must depend upon the condition of the principal secretions, or of the circulating fluid. Where the secretions of the digestive organs are regular, and the patient merely wants power, the preparations of bark, as quinine, or the solution of yellow bark, will be found of service; but if, at the same time, with the want of power, the patient is unusually pallid, and the extremities cold, some preparation of steel, will effect more good than the bark. In cases occurring with a marked scrofulous diathesis, he has prescribed small doses of iodine, with hydriodate of potass in some light bitter infusion.

From among several cases, we select one. It is, perhaps, related a little diffusely, but as an illustration, it is not without its value.

"I lately saw a nobleman, who had been the subject of corneitis in both eyes for above five months. It occurred in the latter part of the winter, and whilst he considered his general health to be good; but he had, for a week or two previously, experienced unpleasant rheumatic pains, about his shoulders and neck. The means, resorted to, at first, to relieve the ocular disease, were altogether of a depletory kind: and, under such treatment, the disease advanced. Other advice was then called for, and he took colchicum and mercury, and used further means of depletion locally. He still got worse. Another opinion was then obtained, and mercury was prescribed in large and frequent doses, with a continuance of leeching and cupping locally, with a spare diet. The mercury

produced diarrhoea, and great general depression and debility, so much so, that it could not be continued. The hydriodate of potash, with iodine, was also given, but it produced distress of stomach, and could not be gone on with. A more generous diet was then allowed; leeches were occasionally applied to the eyelids; and counter-irritation was promoted by daily friction on the temples. His general health now improved, and the ocular affection became, in a degree, mitigated; and, in this state, I was requested to see him. I found considerable intolerance of light; numerous conjunctival and sclerotic vessels, filled with red blood: both corneæ nebulous, but not sufficiently so, to prevent my ascertaining that the irides were grey or blue. I could not detect vessels, filled with red blood, on the cornea. The patient could discern the outline of a person, but could not distinguish features. His general aspect was pallid, with a look of depression. The hands were rather cold, and the pulse quick but feeble, and the skin felt somewhat harsh and dry. I recommended a continuance of generous diet, and of such stimulus as was found agreeable and beneficial; that he should take one grain of mercury with chalk, and two of compound powder of antimony, night and morning, (there was no evidence of mercurial action at this time,) with some cusparia and ammonia, twice a day; that he should be immersed in a warm bath every other day, for ten minutes at a time, at a temperature not exceeding 98°; that he should be allowed exercise in the open air daily, when the weather was dry, and the wind not from the east or the north. I further consented to the continuance of a slight counter-irritation, on the temples by friction; and the application of a leech or two, to the lower eyelid, in case of a recurrence of pain; and a drop of a solution of belladonna, (which had been used for some days previously,) was also to be applied as before. After eight days I saw the patient again, and found very considerable improvement. The intolerance of light was greatly diminished, and on my approaching him, he said he could distinguish my features, so as to be able to recognise me, in future, with facility. The red conjunctival vessels in the left eye had nearly disappeared; and the cornea, to rather more than half the upper part, had regained its transparency. Nebulae still existed at the lower part, so that he could not distinguish objects below the eye. The right eye still exhibited some degree of conjunctivitis and scleritis, and the entire cornea remained hazy, but not so densely so, as on my previous visit. He had not pursued the plan of treatment recommended to its full extent, inasmuch as he had not taken more than two or three doses of the cusparia and ammonia; and, after two or three days from my first visit, he had omitted one dose of the mercurial in the day, which he had been desired to do, if he had any symptoms of disturbance of stomach or bowels; and this he had warning of; but in diet, exercise, and use of the bath, he had been most regular; and he applied two leeches, on two occasions, to the lower lid of the right eye. A continuation of the same plan was urged, and I saw him again, after the interval of a week. His progress, during the interval, had been most satisfactory; a further improvement having taken place, both as regarded the local disease and the general health. He had, however, taken a few doses of the hydriodate of potash, by the advice of his surgeon, and this had created a slight degree of gastric disturbance. It was, therefore, agreed that it should be omitted, whilst, in every other respect, the treatment was to be continued as before. After a week's interval, again I found still further progress to recovery, the left cornea being nearly clear, and the right presenting only slight nebula at its lower and outer part; but the vessels of the conjunctiva and sclerotic still exhibited, in a trifling degree, unnatural distention by red blood. The progress had been so steady and satisfactory, that we considered our patient might safely quit London, which he did a few days afterwards; I saw him just before he left town, and found little more than slight nebula of the right cornea remaining." 225.

Of Inflammation of the Cornea with Vesication.—We notice Mr. Tyrrell's account of this affection—a partial separation of the conjunctiva of the cornea, by effusion of serous fluid.

The symptoms, says Mr. Tyrrell, occur in paroxysms, and there is an extremely irritable condition of the eye; great intolerance of light, severe darting pains, a sensation, as if a sharp and hard foreign particle, were lodged beneath the palpebra; increased heat and lachrymation, creating a sense of scalding. These attacks are gradual in their approach, being preceded by slight uneasiness; but they subside suddenly, leaving only a dull aching pain, which is augmented towards evening.—There is not any useful vision, even between the paroxysms.

Spasmodic action of the orbicularis muscle, from exposure to light during the paroxysm, and a discharge of the superabundant fluids; evidence of increased action in the conjunctiva and sclerotic, many of their vessels being filled with red blood; only a few of the latter, but very many of the former, being perceptible. A partial nebulous condition of the cornea exists, in the centre of which, a small vesicle distended with fluid, may be perceived, if the eye be examined during the paroxysm; otherwise, a thin portion of loose membrane, which is partly separated, much as the cuticle is, after the puncture of a cutaneous vesicle.

Mr. T. has only seen this disease in adults, out of health, and, in most instances, when there has been a tendency to rheumatic affections. Local remedies he has seen no benefit from, and it is only from constitutional treatment that he has seen any. A case will illustrate *that*.

"In the first well-marked case of the kind which came under my care, I tried numerous local applications, but without producing any good; and I also pursued several plans of general treatment, for a long time, but could not effect any decided improvement. The patient was also the subject of extensive urethral disease, on which account, (after he had been for many weeks in attendance at the Ophthalmic Hospital.) I admitted him as an in-door patient, at St. Thomas's Hospital, where, in addition to the alterative medical treatment, I directed the use of the warm bath every other day, for the relief of urethral affection; he was taking at the time, small doses of the bichloride of mercury with sarsaparilla, and had been doing so for several weeks previously, as it appeared to check the progress of the ophthalmic disease, although it had not produced any decided improvement in it. After he had taken the bath two or three times, a very marked alteration, for the better, took place in the eye; and I was much gratified in a few weeks, to find that it was perfectly restored." 243.

Several cases have since done well under treatment of a similar kind.—But the preceding may be taken as a sample of the whole.

Of Inflammation of the Cornea with Deposition of Earthy Matter.—Mr. Tyrrell believes that the deposit he is about to describe is earthy, and that it has an inflammatory origin.

Most frequently the cornea is partially dotted or speckled with small irregular, dull, and defined opake spots, clustered together, and occupying various positions, in different cases being sometimes near the centre, and at others towards the circumference, but not confined to any part of it. If viewed obliquely, these little patches appear slightly elevated, from the surface of the conjunctiva. If the inflammatory action is still proceeding, the

cornea is nebulous, from slight interstitial deposit of fibrin, especially beneath the seat of the superficial disease. This nebula, however, soon subsides, after the inflammation is subdued, when the small opaque spots on the surface become more distinct and defined.

He has occasionally seen this deposit confined to one spot an eighth of an inch in diameter. He has twice removed the substance with a needle, but unfortunately did not submit it to chemical analysis. He doubts the correctness of the opinion that these deposits are precipitates from the solutions of metallic salts, particularly those of lead.

"In several instances, I have seen this appearance, when the patient has not previously made use of any metallic preparation. In some, I have seen the deposit increase, when I have been confident that merely tepid water had been applied—and further, I have known a second and third attack of disease, creating this deposit, without any of the solutions alluded to being employed.

Supposing such an appearance to result, from the continued use of a solution of the metallic salts, I consider that it would be a common occurrence at the Ophthalmic Hospital, as the acetate of lead, in solution, is the common lotion prescribed in cases of simple ophthalmia, with ulceration of the cornea; and such cases are very numerous.

The cases, however, in which the cornea exhibits the appearance above described, are extremely rare." 248.

He has seen this disease in children, and in persons of middle age, but never in advanced age—principally in those of scrofulous habit, and in most instances also subject to rheumatism or gout.

The first object, in treatment, is the removal of any inflammatory action that exists. He has generally employed a weak solution of the acetic or hydrochloric acid as a lotion, and with the best effect, in promoting a gradual removal of the deposit. In a few cases, in which the affection of the cornea, has been combined with a chronic ophthalmitis, and the disease has been altogether of long standing, he has failed, and he has known the eye destroyed by a slow disorganizing process.

Of Ulcers of the Cornea.—An ulcer of the cornea, says Mr. Tyrrell, must be in one of the following states.

First, that which we may term healthy, when its surface and circumference exhibit a degree of haziness, or opacity, of a whitish or grey aspect, which is owing to the effusion of adhesive matter on the surface, and in the surrounding texture, which is essential to the healing of the part.

Second, a state in which too much action exists, and which may be recognized by the appearance of small vessels carrying red blood, ramifying into the newly effused matter in the ulcer, which, as described in the first case, renders its surface, and the part immediately around it, nebulous or opaque.

The third state, is that in which there is an evident want of action—when the ulcer appears clear and transparent; merely a small dent presenting itself on a close inspection of the surface, as if a small portion had been cleanly excised by some sharp instrument; there is no apparent deposition of lymph, or any appearance of increased action, as in the two former instances.

The first state, combined with inflammation, indicates that the inflammatory process is not of a very severe kind.

The second shows, that the local action is beyond that which is necessary, and, therefore, that it should be checked.

In the third form, there is a want of action, which shows the surrounding inflammation to be of a chronic or indolent kind, requiring the use of local, as well as general stimulants.

Mr. Tyrrell thinks that on a right understanding of the preceding conditions, hinges the proper mode of treatment. Thus, he says, when the ulcer presents the appearance first described—as the healthy action is proceeding, it is merely required to watch the case, and, by timely application, to prevent any increase of action. In the second instance, the necessity for depletory measures is clearly indicated, and these must be steadily pursued until the visible vascularity of the ulcer is subdued.

In both states, the most simple and inoffensive local application must be employed—as tepid water, or the decoction of poppy-heads, or chamomile flowers. The third form is more difficult to manage. It must first be ascertained whether there is simply a deficiency of local action, or of both local and general. If the former only, the application of mild stimuli only is requisite. When there is feeble constitutional power as well, both local and general remedies are needed. The stimuli employed must be at first weak, only of sufficient strength to create a slight smarting when applied; they are best used in the form of solution, so that they can be thrown immediately on the affected part, by means of a syringe. The application should be repeated, every five or six hours, until a slight haziness around the ulcer, indicates the commencement of the proper action—and, at the same time, the strength of the solution should be increased gradually, or a stronger stimulus employed, each time, until the desired effect is produced. The best stimuli are the salts of zinc, and the nitrate of silver. Mr. Tyrrell prefers this greatly to the nitrate of silver in substance.

It often happens, says Mr. Tyrrell, that ulceration of the cornea takes place in the chronic stages of purulent or strumous ophthalmia, when a nebulous and vascular condition of the cornea exists, as consequent upon the granular state of the eyelid, or continued scrofulous inflammation.

In such cases the ulcers are generally indolent, being transparent, although many vessels carrying red blood are apparent in the conjunctiva corneæ; so that upon superficial inspection, the presence of these red vessels might be taken as evidence of too much local action, and the ulcers be considered as inflammatory; but if a careful examination be made, the red vessels cannot be traced to the ulcers.

“In addition to the forms of ulcer of the cornea which I have enumerated, two others exist, to which the term sloughing may be applied; the one is dependent on an excess of surrounding action, producing an impediment to the circulation; when a portion of the cornea, losing its vitality, assumes a dense dull opaque appearance, and becomes separated, by a process of ulceration, which I have described when speaking of purulent ophthalmia. But little mistake can be made in the treatment of such a case, as the surrounding acute inflammation is generally sufficient to indicate the proper plan to be pursued.

The other form of sloughing ulcer depends on the want of local action; and

the sloughs that are separated from the surface of the ulcer, are of a dirty ash color; they are thrown off in successive thin layers. In this case there is but little, if any, evidence of increased action; and when not covered with slough, the ulcer is clear and transparent." 257.

Staphyloma Corneæ.—Mr. Tyrrell in describing the operation for the excision of the staphyloma, observes that "the operation cannot be effected without incising the iris, which is always adherent to the staphylomatous mass; and its vascularity is, in some cases, so much increased, in consequence of the previous disease, that severe hæmorrhage occasionally ensues; to such an extent have I known this occur, that I should be averse to perform the operation on a child of feeble power. The bleeding may be in a measure restrained by cold and pressure; but the patient cannot bear the latter to a sufficient degree to check the hæmorrhage altogether, and it sometimes continues for many hours.

In performing the operation, a sufficient opening should be made, to allow of the escape of the humors; otherwise, a fresh staphyloma is likely to form; but I should not advise the operator to interfere with the sclerotic tunic, as I have observed that severe suppurative inflammation has followed, in several cases in which that coat has been divided."

"*Partial Staphyloma*," he adds, "often exists under circumstances, which render its reduction a matter of importance or anxiety, as when there is sufficient of the healthy cornea left to enable the surgeon to form an artificial pupil beneath, or when the projection gives rise to much irritation or deformity. I have succeeded, in several instances, in effecting a reduction of partial staphyloma, by the careful application of nitrate of silver, or hydrate of potash, in substance: I have applied the escharotic first at the base of the projection, taking care not to injure the remaining sound portion of the cornea—the effect has been the separation of a small slough; but previous to such separation, a deposit of fibrin beneath, by which the deeper part has become more solid and strengthened; after the part has recovered, from one application, I have made a second close to, but not upon the same spot, and nearer to the summit of the projection: again and again, I have repeated this operation, acting upon the more prominent part, until a considerable or perfect reduction of the staphyloma has been accomplished; and this has enabled me, in a few cases, to form an artificial pupil, subsequently, of much more utility to the patient. I prefer the hydrate of potash, unless the projection be very small; for its use is followed by a much larger deposit of fibrin, than results from the nitrate of silver. Before applying either, the portion to be used, should be reduced to a fine point; and when used, the surface should be cleansed from secretion, by a piece of lint; the application should be lightly made; and immediately afterwards, a little sweet oil should be dropped into the eye, before the eyelids be allowed to close."

Conical Cornea.—In the early stage, he thinks it may be retarded, if not prevented from increasing by the local use of stimuli. But, though he knows of nothing that has any beneficial effect upon bad cases, he has succeeded in affording much relief by a very simple plan. This consists in

altering the position of the pupil, and removing it from beneath the centre of the cornea, or that part which has its figure most changed, to near the margin, when the least change has occurred; the error in refraction is consequently much lessened, and the vision becomes more perfect, and the focus lengthened.

"I effect the change, in the position of the pupil, in the following manner. I make a puncture, with a broad needle, close to the junction of the cornea and sclerotic; but through the former, and at the part corresponding to the interval between the abductor and depressor muscles; that is, at the outer and lower part of the cornea. (the instrument should be just of efficient size to effect an aperture merely large enough to admit the passage of a small blunt hook;) I then introduce a small blunt hook, by the aperture in the cornea, and catch the pupillary margin of the iris; and the margin thus caught, I carefully draw out of the aperture by the hook; and, subsequently, as much of the membrane as is requisite to cause the pupillary opening of the iris, to change its position, from the centre to the outer and lower part of the cornea. The portion of the iris, brought out by the hook, I then cut off by a fine pair of scissors, or leave it hanging from the wound, in which part of this membrane is held, and subsequently becomes fixed in the cicatrix; whilst the projecting part separates by ulceration or slough. I usually cut off the projecting piece of iris, close to the wound, otherwise, it is apt to create some degree of irritation, by the friction of the eyelid, but should it be left, and irritation arise, it is soon remedied, by touching the portion of iris with nitrate of silver. I have performed this operation seven or eight times; and, in each case, it has benefited the vision, and, in two cases, very considerably. The advantage gained is more than adequate to the risk incurred: for, in no instance, has any evil followed, beyond the slight degree of inflammation, necessary to repair the mischief, occasioned by the operation." 279.

SCLEROTITIS.

Passing over Mr. Tyrrell's description and general mode of managing scleritis, we may mention the following hints,

In those cases, says Mr. T., in which the constitutional powers are naturally feeble, or have been reduced by medical discipline, a generous diet should be allowed: still, however, without acids, or fermented liquors; the bowels should be kept regular, and mild tonic medicines resorted to. "I have found," he goes on to say, "the most decided and rapid benefit, from the use of small doses of bark and dried carbonate of soda, (five grains of each,) given about every four or six hours. This remedy was mentioned to me, some years ago, by Mr. Wardrop, and it is a very valuable one, inasmuch as I repeatedly find it successful, after the continued, but useless, trial of other means.

It appears necessary to employ the small doses, to produce the beneficial effect; for, in several cases, I have known scruple or half-drachm doses administered without benefit; and the same patients recover quickly, by resorting to the smaller quantities.

One of my colleagues had suffered from a slight attack of scleritis, for several weeks, and the disease had baffled the ordinary local and general remedies; tonics had been used freely, and, among them, large doses of bark and soda; and small doses, tried at my suggestion, soon relieved the eye from the diseased action." He has found a change in the tonic service-

able. He prefers warm applications to cold—dry warmth to wet—the former effected by means of small muslin or thin flannel bags, filled loosely with chamomile flowers, and heated in a hot plate or a warming pan.

AFFECTIONS OF THE AQUEOUS MEMBRANE.

Mr. Tyrrell assures us that three cases have come under his observation, which have proved to him, most satisfactorily, the extension of the aqueous membrane over the iris, continuous with that which lines the posterior surface of the cornea. In each of these cases slight cloudiness of the membrane existed, and the iris appeared dull and incapable of reflecting light, though not altered in color; and small tubercles could be easily perceived, both on the corneal and iritic portions of the membrane, varying from the minutest point to the size of the head of a large pin.

INFLAMMATION OF THE IRIS.

Mr. Tyrrell denies the justice, and we cannot help thinking that he is right, of those manifold varieties of iritis which ophthalmologists have been so anxious to insist on. "I deem," says he, "such division of the subject to be of no practical utility, with the exception of a division into acute and chronic, which I shall therefore adopt. In fact, I do not admit of the distinctions which have been attempted; but I consider inflammation of the iris to be the same, whatever may be its mode of origin; it may, and does vary in intensity, and in rapidity of progress; and these circumstances are depending more upon the condition of the constitutional power of the party afflicted, than upon the mode of origin; a specific taint by its influence upon the system, no doubt, in many cases modifies the local disease. I cannot allow, therefore, that idiopathic, traumatic, syphilitic, rheumatic iritis, &c. are distinct diseases, but one and the same affliction, generated by different causes."

Mr. Tyrrell is a decided advocate for mercury in acute iritis. "I am so satisfied," he protests, "with the efficacy of mercury, in these cases, that I deem it almost a specific in pure iritis. It is probable, as asserted by some authors, that this affection may be subdued without the aid of mercury, by the ordinary depletory treatment, which is usually employed in common cases of inflammation. I am of opinion, however, that there is considerable risk in such mode of treatment; as I have known many cases, in which it has been pursued to a great extent, and has nevertheless failed in subduing the disease; although it has mitigated its severity, and arrested its progress to a great extent; but a chronic stage has supervened, which has gone on in a slower, but not less certain way, to the ultimate destruction of vision.

The mercurial plan of treatment I consider to be safe and certain, when carefully pursued; the antiphlogistic plan I consider to be uncertain, and therefore unsafe; and if it do succeed, it does not effect a cure in double the time at least, in which mercury annihilates the disease."

Mr. Tyrrell relates two interesting cases of cyst connected with the iris, in the one certainly, in the other supposed to be, dependent on a foreign substance. We quote the first case as the shorter. In both, vision was substantially lost after the performance of an operation.

A singular case of formation of cyst, in connexion with the anterior surface of the iris occurred in a boy, sent to the Ophthalmic Hospital some

time since. The boy had been an apprentice to a blacksmith, and during his work, a small particle of hot iron penetrated his cornea, and lodged in the iris; this gave rise to severe inflammation, which was with difficulty subdued; but he recovered after several weeks, with good vision, but a slightly disfigured pupil. Some months afterwards, a small cyst was formed in connexion with the injured part of the iris, and it continued gradually to increase without suffering or inconvenience, until it acquired the size of a small pea; it was attached near to the pupillary margin of the membrane and projected into the anterior chamber; it was of nearly a round figure, and the surface was shining and white, like a delicate tendinous structure. The boy was sent up to the London Ophthalmic Hospital, under the care of Mr. Scott, who removed the cyst, but useful vision was lost.

Tremulous Iris Mr. Tyrrell believes to depend on a partial or complete paralysis of its muscular fibres. This theory he grounds on the fact of there being very little or no motive power in the iris, in all cases which have come under his observation. He affirms that the tremulous motion is always greater when the iris does not expand or contract, so as to change the diameter of the pupil, than when a slight power of contraction and dilatation remains.

Conjunctivo-Scleritis.—Mr. Tyrrell's account of this is complete. We introduce his remarks on colchicum and turpentine. "*Colchicum*," says he, "is so uncertain a remedy, that I rarely employ it. I have, however, occasionally known it to afford relief most rapidly; but, I have often used it, without its producing the slightest benefit, as regards the local affection. From the experience I have had respecting it, I should say that it rarely, if ever, does good, when any functional disorder of the stomach or bowels exists; or when the index to these parts, namely, the tongue, is at all loaded or foul; but that when the tongue is clean, and the secretions from the alimentary canal are proper, it will sometimes effect a cure more rapidly than any other remedy I know of. I use it occasionally in the following way. I first act freely upon the bowels by some drastic purge, combined with mercury; and soon after, I direct the patient to take half a drachm of the wine of the colchicum seed, combined with a small quantity of alkali, and some narcotic; and to repeat the dose every six hours. I take care to see the patient after the second or third dose, in order to determine upon the continuance of the remedy; for if it produce nausea, or affect the bowels, it seldom acts beneficially on the ocular disease; but if relief be obtained from the first two or three doses, a cure is usually promoted by perseverance in this treatment. When I prescribe the colchicum, it is usually in the early stage of the disease; not at the period at which I have recommended the use of soda and bark, or quinine; but whilst the conjunctival affection, as well as that of the sclerotic, exists."

Turpentine he has also found so uncertain that he has ceased to prescribe it. He has known it occasionally serviceable in the second stage of affection, or when the conjunctivitis has been subdued; but he prefers small doses of bark and soda, or of quinine, to it, as more certain and safe remedies; whereas, the turpentine is liable to produce severe and continued distress. He introduces several cases very much in point.

Sclero-Iritis.—Mr. Tyrrell gives us his experience, too, on colchicum and turpentine in sclero iritis. He tells us that he has occasionally employed colchicum in the early stage of the disease with good effect, when the tongue has been clean and the bowels regular; but very seldom are the general secretions in such order, as, in his opinion, to admit of the use of this remedy, with fair chance of success. It is in these cases, also, that turpentine has sometimes proved serviceable; and from which it, as well as bark and soda and other tonics, have obtained credit as remedies for iritis; over which they have little or no influence, but would, in most instances, act injuriously. In sclero-iritis the affection of the iris is usually secondary, consequent on, and in some measure depending upon the scleritis, and may sometimes be cured by subduing the scleritis or primary disease; but, in most cases, it would be extremely imprudent to trust to the subsidence of the iritis, and treat only the scleritis; for though the iritis is first promoted by extension of morbid action from the sclerotic, the inflammatory action is not controlled by the disease of the sclerotic; but once fairly set up it goes on independent, in a great measure, of the scleritis. Further, the disease of the iris soon extends to the choroid, and inflammatory action in these textures places the organ in great jeopardy, as regards vision; so much so, that it would be folly not to resort to a remedy, which is almost certain in its effects, in checking the morbid action of the iris and choroid, if it be properly managed, and supposing the disease to be remediable.

ABSCESS OVER THE LACHRYMAL SAC.

Mr. Tyrrell directs attention to a trifling affection which we have seen mistaken.

It is not uncommon, he says, in scrofulous children, to see a small circumscribed abscess immediately over the lachrymal sac, which from its appearance and the symptoms it gives rise to, might be readily mistaken for disease of the sac itself; for the swelling, either by its pressure on the sac, or by displacing the inferior punctum lachrymale, and interrupting the course of the secretions to the nose, occasions an epiphora; and the nostril of the same side appears dry. Independent of diseases in the lachrymal passages being rare in children, the following circumstances will generally explain the true nature of the complaint: the rapidity with which the swelling forms, and its not being preceded by any watering of the eye or epiphora; the early discoloration of the surface of the swelling, and its not having the decided circumscribed and hard feel which abscess of the sac presents; the pain also is very trifling, in comparison with that which accompanies suppurative inflammation in the sac itself. An early opening, but a cautious opening is necessary. And, if abscess of the palpebra point at the upper and outer part of the superior palpebra, the surgeon must be careful not to pass the lancet very deep, as he may wound some of the ducts passing from the lachrymal gland, and occasion a troublesome fistulous sore.

How to Cure a Black Eye.—This, as Mr. Tyrrell observes, somewhat grandiloquently, “although an affection of trifling import, it is usually one of considerable importance to the patient unless very young; as it is generally considered a mark of a quarrelsome disposition; and often excites re-

marks which few can with patience submit to." In plain English, nobody likes to have a black eye. But how to get rid of it? When induced by external force, for the first few hours, cold should be applied; and if the tumefaction become considerable with symptoms of inflammatory action, local bleeding should be also resorted to. As soon as the symptoms of inflammation have subsided, a poultice, composed of the root of the black bryony, finely scraped, after being deprived of its external bark, and mixed with crumb of bread or flour, so as to form it of a proper consistence, should be laid over the discolored part, enclosed in a thin muslin bag; a fresh application should be made every six or eight hours, until the absorption of the effused blood be completed; this will usually take place in forty-eight hours, or a little more, even when the ecchymosis is considerable. "I became acquainted, continues our author, with this remedy, from noticing that some of our celebrated pugilists appeared, a few days after severe encounters, without any disfiguration from ecchymosis; and on enquiring the reason of this, I found they employed the bryony root, in the manner I have described, to remove such evidence of their occupation. When the bryony root cannot be procured, the absorption may be accelerated by the use of most of the ordinary stimuli, employed in the form of poultice, as oatmeal and vinegar; muriate of ammonia in solution, mixed with bread or linseed; stale beer-grounds, &c.

TUMORS OF THE PALPEBRÆ.

Mr. Tyrrell first speaks of the small *sebaceous tumor*, which he punctures and squeezes.

Secondly, of the *Glandiform Tumor* which he thus describes. These tumors commence in a manner very much resembling those last described, excepting that they are less numerous. At first, there is an appearance of a deposition of a white sebaceous matter beneath the cuticle; but the aspect of the tumor soon alters, it increases to a much larger size than that last described; and, occasionally, acquires a magnitude equal to that of a small bean. As it increases, the uniform white surface is interrupted by streaks, and it becomes somewhat mottled. If allowed to proceed, suppuration occurs in its centre, and this occasionally takes place, when it is of small size—not so big as a small pea; or it may not occur, until it has acquired the magnitude mentioned above; when matter forms, it gradually makes its way, by ulceration, through the summit of the swelling; and, after its escape, the cavity formed by the abscess is gradually filled up, by the increase of the morbid growth; and after the cavity is thus obliterated, the growth is continued through the aperture by which the matter has escaped. This growth is irregular, and resembles very much in appearance the common wart, for which it is very constantly mistaken. These tumors may be readily removed by passing a lancet, or pointed knife, through the tumor, so as to divide it from base to summit, with some part of the surrounding and investing integument. After such division, firm pressure with the nails and extremities of the fore-fingers, on opposite sides of the base of the tumor, will cause it to rise, so that it may be readily detached, by seizing it with a pair of common dissecting forceps; when excised and examined, the morbid growth has a very close resemblance to a portion of a conglomerate gland, as the

lachrymal, parotid or pancreas. After the operation, the lead lotion is to be applied.

Thirdly, of *Vesicular Tumors*. They are semi-transparent; and seldom exceed, in size, the volume of a swan-shot; occasionally, a single one arises, but more frequently many exist, at the same time, upon one of the lids. A considerable portion of the vesicle should be removed, and some stimulant or escharotic should be applied.

Fourthly, of *Warts of the Palpebræ*: for which he uses a fine ligature, and afterwards, strong acetic acid.

Fifthly, of *Encysted Tarsal Tumors*.

"When small, the tumor is scarcely apparent to external view, and can be only felt, beneath the integument of the palpebra; and the sensation communicated to the finger is such, as if a small shot were seated in the cellular tissue, beneath the skin; it also feels as if loose beneath the integument, and is usually situated near the centre of the tarsus. If, however, the lid be everted, a discolored spot on the inner surface of the tarsus; &c. indicates the point of connexion between the tumor and this structure. The tumor slowly increases; and many weeks or months frequently elapse from the period at which it may be first felt, until it has acquired sufficient size to be readily perceived, on viewing the outer surface of the palpebra. The integument, immediately above the tumor, is generally of the natural color and appearance; unless any acute inflammatory action be set up, then it assumes a redish color. This rarely happens until the swelling has increased so far as to be readily perceptible. It is at first hard and circumscribed; as it increases, it diminishes in density, and acquires an elastic feel; but is still firm; it seldom exceeds in size the bulk of a common pea. The spot I have alluded to, apparent on the inner surface of the lid, is at first red, and as it increases, the centre exhibits a yellowish cast; and in the more advanced stage of the disease, a bluish spot occupies the centre; whilst immediately around this, the redness is still apparent; frequently more than one exists at the same time."

"The diagnosis of this disease is important, as it is most readily cured, when recognised, merely by everting the lid and puncturing the cyst, through the conjunctiva and tarsus; and, immediately that the fluid contents have escaped, breaking up the cyst, with a pointed probe, introduced through the puncture, and forcibly moved about in all directions." 376.

We cannot say that we have seen this plan always answer. We generally introduce a pencil of caustic to destroy the cyst; but even that will occasionally fail.

Sixthly, of *Encysted Tumors of the Palpebræ unconnected with the Tarsus*.—Mr. Tyrrell dissects these carefully out, if possible, without wounding the cyst. But, in those cases in which the cyst is intimately connected with the periosteum—and this is usually indicated by the indentation of the bone, he feels little inclination to meddle with them, as he has seen much mischief the consequence. He introduces several cases, we quote one.

"In one case in which an encysted tumor had existed, in connexion with the frontal bone, near the middle of the superciliary ridge, an attempt was made, I believe, to excise the cyst, but unsuccessfully; the operation was followed by excessive inflammation and sloughing; by which the bone became exposed, and subsequently exfoliated to such an extent that some months after, when the lady was sent to town for my advice, I could touch some extent of the dura mater, from the loss of a large part of the roof of the orbit. I eventually succeeded in closing the wound, and fortunately but little deformity resulted." 480.

A PRACTICAL TREATISE ON THE FUNCTION AND DISEASES OF THE UNIMPREGNATED WOMB. Illustrated by Plates, &c. with a Chapter on Leucorrhœa, Fluor Albus, or Weakness. By *Charles Waller, M.D.*

THE subject of uterine disorders has been so frequently and voluminously discussed of late years that one would suppose there could be no demand for another work of the kind, which merely repeats or comprises the opinions expressed in those which have gone before it: however, the subject is so important an one, that a practical treatise on some of the most common affections may still be a desideratum.

Dr. Waller has endeavored to supply this by the book now under notice, which is made up of a series of lectures delivered by the author at the "Aldersgate-street School," and has been published in the present form, to give a more continuous, and connected view of the matters treated of, than was possible when each lecture was scattered among the pages of a weekly periodical.

The work however is not to be considered as a complete dissertation on the diseases of the unimpregnated womb, for it is only a very condensed description of a few of them, the author declaring in his preface how fully he is impressed with the force of the aphorism "*μεγα βιβλιον μεγα κακον*:" Now though we are willing to admit that a great book may be a great evil, yet it by no means follows that a small one must be the contrary, and in the present instance Dr. Waller has been so far led astray by his reverence for this dogma, as to omit the mention of many facts which would have greatly added to the utility of his plain and practical descriptions, without rendering them laboured, or diffuse.

The arrangement, or division of the subject, is a very simple one, and perhaps for all practical purposes, is as useful as the more complicated classifications adopted by some of the writers in this class of diseases; thus the only division of it is into "Disorders of the Menstrual Function" and "Diseases of the Unimpregnated Womb." The former of course including the various kinds of catamenial disturbance, and the latter, some of the principal organic lesions to which the uterus is obnoxious:—the whole subject being discussed in the following order, viz:—

1. The function of the Unimpregnated Uterus.
2. The Disorders of this Function.
3. The period of Female Existence designated the "Turn of Life," and
4. The Diseases of the Womb itself.

The Chapter on the "Function of the Unimpregnated Womb" presents us with no new facts, and consists of the usual observations on the periodicity of the menstrual discharge; the average age at which it first appears; the local and general changes which characterise this epoch of life; the particular part which furnishes the discharge, &c.

The author takes occasion to repudiate the idea of the menstrual fluid being possessed of any "malignant property;" but after all, it is not quite so certain that the old writers were altogether wrong in maintaining the affirmative of the question: that they *exaggerated* the mischief is certain, but that it often causes præputial excoriations to put on the characters of irritable,

and to become troublesome ulcers, is a fact of which we at least have no doubt.

Emansio, and suppressive mensium, the two forms of amenorrhœa, are discussed together with chlorosis: under the first head are some brief practical remarks on retained menses from imperforate hymen, and occlusion of the os uteri: also on emansio arising from faulty development, as absence of the ovaries, &c.; but there is some confusion caused by designating "chlorosis" as one of the conditions of "Emansio," whereas this particular state is much oftener met with during temporary "suppression;" nor, in point of fact, is it necessarily the concomitant of either, for it not unfrequently happens, that chlorotic girls menstruate regularly, and *properly*; without doubt the general rule is, that if there be any menstrual discharge in these cases of chlorosis, it is scanty and pale-coloured, but there are many exceptions to it notwithstanding. Dr. Waller very justly insists on the propriety of considering the absence of the catamenia in such cases, as an effect of the generally deranged health, and not as a cause of it: indeed this opinion needs no other proof of its correctness than the fact, that in many instances the menses do not flow for several months after the general symptoms of chlorosis have vanished, and the patient has been quite restored to health and strength.

We should not imagine that any well-informed practitioner would be likely to mistake chlorosis for "pulmonary disease:" still we are warned of the danger at page 22:—the usual absence of the catamenia in tubercular phthisis, might have been mentioned in an enumeration of the symptoms common to both.

In his treatment of chlorosis our author adopts the one generally employed. He is opposed to the use of emetics, and recommends the combination of stimuli with tonic remedies in some cases: he gives a formula for pills on this principle at p. 25, to the efficacy of which we can speak favorably. To the employment of the forcing remedies called emmenagogues, Dr. Waller is stoutly opposed: in fact he never loses an opportunity of inveighing against the practice, or of shewing the absurdity of it; his remarks on this point are always judicious, and the following sentence will prove how laudably earnest he is in the matter. "The reader is earnestly implored not so far to forget rational principle as to be induced to have recourse to that empirical practice which consists in the administration of those stimulating and forcing remedies called emmenagogues."

Again, when speaking of the treatment of emansio mensium attended with plethora, for which he recommends periodical bleedings—he says, "The use of stimulating emmenagogue medicines can in nowise be justified, as the non-appearance of the discharge is the result of an action of the menstrual vessels, very analogous if not actually amounting to inflammation."

The remarks on sudden suppression are good and concise; but the disadvantages of a small book, which we before hinted at, [are apparent in such sentences as the following. "Should month after month pass away without the restoration of the secretion, it will in all probability be found that other organs besides the womb are disordered, and these will then require particular attention."

Now we think it is not unreasonable to wish that a book especially

intended as a practical guide for students, should have been a little more explicit, as to these probably diseased organs. The subject of menorrhagia is briefly but ably discussed: Dr. Waller uses the term in its most extended sense, including all undue sanguineous discharges from the unimpregnated womb, of course distinguishing those which contain "integral blood," from those which are only menstrual fluid in excess.

Profuse menstruation is however, as our author justly observes, comparatively rare, and even then, it is not necessarily to be considered as a disease. In the active form of menorrhagia, Dr. Waller depends mainly on blood-letting and laxatives: after which he recommends the nitrate of potass in doses from gr. xv. to xxv. "well diluted in barley water," as a most effective depressing agent; he very wisely questions the utility of mercury, and is no friend to the ergot. His description of the general symptoms of "passive menorrhagia" is as follows.

"With this hemorrhage there is a rapid reduction of the little strength previously existing; the countenance is pallid, in some cases assuming an almost bloodless appearance; the pulse hurried and feeble; the extremities, and sometimes the whole surface of the body cold; there is a weight and pain in the head, particularly over the eyebrows and forehead; a distressing sensation of faintness and giddiness, and occasionally nausea and vomiting; laborious respiration is also a frequent attendant on the more severe and dangerous forms of passive menorrhagia." 51.

All of the remarks in this division of the subject are sound and practical; but we should imagine that the cases of this affection, where it will be necessary to "plug the vagina," must be very rare indeed; particularly as it cannot be forgotten that the discharge is, at least in part, a secretion! however, the author mentions a case which occurred in his own practice, where this plan was obliged to be resorted to, and was quite successful, even after the failure of Dr. Haighton's astringent uterine injections. (vide p. 55.)

The chapter on the "*Turn of Life*," is rather bare and meagre; a few observations are made relative to the frequency of uterine and mammary diseases at this period, which the author explains thus—"This opinion is decidedly erroneous: the true explanation of the reason why an advance of disease is so frequently noticed at the "turn of life" is simply this, that the constitution, or the parts disposed to morbid action, are not now, as heretofore, relieved by the local determination and secretion."

The subject of Sterility or "Barrenness" is dismissed in three pages: Dr. Waller does not seem to know any more about it than his neighbors.

The second part of the "*Treatise*" is devoted to the consideration of the "Diseases of the Unimpregnated Womb," and the author commences the subject by a few remarks on the importance of tracing symptoms to their original cause, since the curable and the incurable diseases have often a great similarity in this respect.

On the Structure and Pathology of Hydatids, we have a longer account than usual; it is evidently a favorite subject, and two out of the six plates belonging to the work exhibit specimens of this disease. On the question of their ever being produced "*sine copula maris*," the author gives no decided opinion; he has never known them in unmarried females, "although he should feel great hesitation in pronouncing this to be an impossible occurrence"

Neither does he coincide in the opinion that these vesicular growths are morbid enlargements of the chorion, and to show that they are not so, he refers to plate 2, which represents a preparation from his own museum, where the uterus being thickened and enlarged, is studded throughout its substance with little hydatid vesicles, a few of which project into the cavity covered by, and behind the mucous membrane: certainly the author has a right to say with regard to this:—"these appearances could not possibly be caused by any morbid alteration of the chorion."

The following quotation will give an idea of the author's opinions on the nature and origin of malignant disease.

"We believe that this and most other species of malignant disorganizations of the uterus arises from the same exciting cause: that inflammation is the *fons et origo mali*; that it is not essentially specific in its character, but observes the same laws, and yields to the same treatment as any ordinary case of inflammation; that the specific character which the disease afterwards assumes depends not upon the application of any peculiar exciting cause, but that the character of such disorder is determined by the tendency which exists in the individual constitution; and lastly, that therefore the same immediate cause will produce in one, common inflammation; in a second, malignant ulcer; in a third, tubercle; in a fourth, cancer; and so on." 133.

This very naturally introduces the subject of Cancer Uteri. In the present treatise the term carcinoma is applied to the ulcerative stage, and the term "scirrhus" only to that hardened enlargement which precedes it.

The opinion already expressed with regard to the first cause of malignant disease is reiterated now: inflammatory action, and that not of a specific kind, but exerting itself in a peculiar constitution, is again stated as the origin of this dreadful malady: and Dr. Waller is very earnest in directing the attention of practitioners to the state of the uterus in all complaints of women at the period of menstrual cessation, lest from an unfortunate delicacy on the part of the patient, who will not often be induced to speak of pains referrible to those parts, this insidious disease should grow unheeded. He is strongly of opinion, that this first stage of "stony hardness" is recoverable from by rigid and long-continued antiphlogistic treatment; and at page 162 he mentions a case cured when in this condition, by repeated spontaneous hemorrhage from the uterus.

The plan of drawing blood immediately from the cervix and os uteri, by introducing leeches there enclosed in a tube is not encouraged by Dr. Waller: strangely enough, he thinks their application to the vulva and the os externum a "preferable method."

No doubt the latter mode is the easier of execution, as the former one requires the personal attention of a medical attendant, or of one trained to the art; but we think there can be no rational doubt which of the two is the more effective.

The treatment recommended in this stage of "scirrhus," besides the local abstraction of blood, consists of the usual palliative measures, which after being enumerated are thus disposed of.

"These, then, are the remedial means to be employed in scirrhus of the uterus; and we conclude our observations on the subject by imploring the reader not to imagine, because the disease is usually fatal, that therefore nothing can ever be effectually accomplished for the patient's relief. We confidently re-state

our conviction, that much may be affected *at the commencement*, not only in the way of palliation, but for the eventual arrest of its progress; the insurmountable difficulties so frequently met with being the result of delay, and this manifestly arising from the slight, and to the patient unimportant, symptoms which indicate its first and only curable stage." 166.

In the ulcerative stage of carcinoma, Dr. Waller, like every body else, has little to recommend, as then "all hopes of cure must be abandoned." He says, and says justly, that nothing but opium will deaden the agonizing pain of the miserable patient; and that the doses of the remedy are not to be regulated by counting the number of grains given, but by observing the effects it produces.

On the question of excision of the uterus, as a last resource, the author quotes Dr. Blundell's results of the four cases operated on by this accomplished obstetrician! he admits that they give no encouragement for future attempts, and in spite of M. Lisfranc, there are not many who hold a different opinion.

We cannot conclude this analysis of Dr. Waller's book without alluding to his total silence on the diagnostic signs derivable from the touch and the speculum. The latter instrument is only mentioned once in the whole book, and then only with a view of forbidding its employment on the score of indelicacy. We have always reprobated the indiscriminate use of it so disgustingly insisted on by some French writers; but there are cases in which it must be used, and as an aid to diagnosis, it ought at least to be mentioned as useful in a practical treatise on uterine diseases. The same may be said of manual examinations "*per vaginam*;" this mode is not open to the same amount of objection as the other, and the "*practical treatise*" of Dr. Waller would not have been the worse for a few practical remarks on this important and very difficult subject.

The six lithographic drawings which embellish the book present curious specimens of the diseases which they very cleverly illustrate.

TRAITE PHILOSOPHIQUE DE MEDECINE PRATIQUE. PAR A. N. Gendrin, D.M. Medecin de l'Hopital de la Pitie. Tomes 2, Bailliere, Paris, 1839.

"PHILOSOPHICAL TREATISE."—We are so little accustomed on this side of the Channel with authors styling themselves and their works *philosophes* and *philosophiques*, that we are always amused with the quiet and gentlemanly assurance of our lively neighbours in this respect.

The practice of late years has been so common with them, that the terms, we suppose, are really not intended to imply much more than the usual "*most obedient*," or "*most humble*," at the close of a business letter. We meet with *Traité Philosophique* in great abundance; M. Bouillaud recently published a *Philosophie Medicale*; there are not a few works on *Anatomie Philosophique*, and *Physiologie Philosophique*: and soon, doubtless, we

shall have philosophical treatises on surgery and midwifery, and ultimately perhaps on separate diseases, so that ere long we may be called upon to notice some philosophical work on uterine hæmorrhage or stone in the bladder!

As far as we know, this foolish practice has prevailed chiefly among the medical authors of late years in France; the literary men seem to be aware of the universal distrust and dislike into which their *philosophe* predecessors of the revolutionary æra have fallen, to have any wish to resume the appellation.

That there are works in medical literature, to which the title of philosophical might be justly applied, we do not deny; but their authors had too much of the modesty of genuine science, to claim it for themselves or for their productions. Need we allude to the immortal writings of Hunter, Bichat, and Laennec? How far the present treatise of M. Gendrin may be considered by himself worthy of being associated with these, we cannot tell; but, without much prophetic presumption, we think that we may assure him that *when* they are forgotten, but not till then, his will have a fair chance of enduring renown.

This "Traité Philosophique" is announced to consist of four volumes; two only have as yet appeared. "It is to embrace and systematise all the parts of medicine which are specially applicable to the knowledge and treatment of Diseases." After a few introductory observations, a great portion of which is far too recondite for us to understand, the author expounds his classification of diseases; dividing them into two great divisions—the first comprehending those maladies which consist in an alteration of the functions of Organic life; and the second, those which consist in the alteration of the functions of Animal life. These two divisions embrace nine classes. 1. Hæmorrhagiæ—2. Diacrisis or alterations of Secretion—3. Phlegmasiæ—4. Pyrexia, or Fevers—5. Anomalotrophies, or alterations of nutrition—6. Heterosarcoses, or formations of Accidental Tissues—7. Cachexiæ—8. Neuroses—and, 9. Vesaniæ, or Mental Disorders. The first seven appertain to the functions of organic life, and the two last to those of animal life.

This nosological arrangement is in our opinion one of the most faulty which we have ever met with, and is liable to innumerable objections; as in one place it associates diseases which have little in common with each other, and, in another, it disjoins those which are practically and essentially very much alike. Most readers will be surprised to observe that the pyrexia are postponed to the hæmorrhagiæ, and to the phlegmasiæ—rather a strange fancy; seeing that fever is a necessary accompaniment of all the phlegmasiæ, and also of all active hæmorrhages. But we cannot stop to canvass the merits and demerits of M. Gendrin's system; we need only state that the whole of the first volume before us and more than one-half of the second are occupied with the description of the hæmorrhagiæ alone; commencing with epistaxis, and successively treating of hæmoptysis, gastro-entero-hæmorrhagia, hæmaturia, hæmorrhoids, hæmorrhage from the skin, then apoplexy, pneumatic-hæmorrhagia, dysmenorrhœa, menorrhagia, and, lastly, uterine hæmorrhage during and after pregnancy.

Had our limits permitted, we intended to have made some remarks on the chapter upon the general description of hæmorrhage. It is very im-

perfect; especially as respects the most practical part of the subject, the treatment.

But indeed this might have been looked for; as the same defect may be predicated of almost every work on practical medicine which issues from the French press. It is truly astonishing how far behind their brethren, not only in England but also in Germany, the French physicians seem to be on every branch of therapeutics. For example, M. *Gendrin* seems scarcely to be aware of the utility of nauseants in arresting hæmorrhage; although they are unquestionably among the most powerful means that can be employed.

We believe that many physicians are deterred from the administration of these medicines by the fear of vomiting being induced, and of the hæmorrhage being thereby aggravated. This fear, we may assure them, is in almost every case groundless; we have repeatedly administered emetics of ipecacuan and the tartate of antimony in almost every form of hæmorrhage, including hæmoptysis, hæmatemesis, and menorrhagia, not only without danger, but generally with the most beneficial results. Vomiting has in general the effect not of increasing, but of decidedly arresting discharges of blood. The nausea that precedes it has a most powerfully sedative effect on the actions of the heart, and on the whole circulation; and even the violent efforts of the stomach and respiratory muscles during the act are not observed to accelerate the force of the arterial circulation, but only to retard for a short time the return of the blood along the veins. The nausea should always be kept up for many hours subsequently, by the use of repeated small doses of the antimony.

Another important omission of M. *Gendrin* is that he does not even notice such remedies as the acetate of lead, or the sulphate of zinc or of alum in the treatment of hæmorrhages: he seems to think that the internal use of such remedies is almost entirely nugatory. In this he is much mistaken. That the effect of these salts, when properly administered, is in many cases most speedily to arrest discharges of blood, cannot be disputed by any one who has fairly tried them. For example, we have repeatedly seen hæmaturia, chronic as a matter of course, checked by the use of alum in the course of a day or two; and many cases of menorrhagia, which had continued long, have very rapidly been cured by the administration of sulphate of zinc in the form of pills, associated with dilute sulphuric acid and the tincture of hyosciamus.* But we must stop in these strictures; and we shall now direct the attention of our readers to one really valuable chapter, at the commencement of M. *Gendrin's* second volume, on the *Physiology of Menstruation*. His observations on this topic are minute and satisfactory; and the conclusions which he draws from them—although they cannot be regarded as strictly original—seem to be quite legitimate, and withal are very interesting.

* These results cannot appear surprising, when we remember that many chemical salts are so rapidly absorbed into the system, and may be detected in the urine and other secretions within a very short time after being swallowed. The recent researches of M. *Orfila* on Poisons, wherein he has proved that the salts of arsenic, antimony and copper, may be detected, not only in the blood and urine, but even in the substance of the viscera and muscles, lead to many important deductions in practical therapeutics.

The most important of these conclusions is that *in every instance of genuine menstruation there is a rupture of one of the Graafian vesicles on the surface of the ovary*, and that this rupture is accompanied with a dilatation of the corresponding Fallopian tube, an approximation of its loose end to the ovary, the presence of a red-coloured mucus within the tube and the uterus, and the development of villousities, probably of a vascular nature, on the inner surface of the latter organ. According to this view, the catamenial discharge is not the primary or essential act in the curious function of menstruation: it is merely the evidence and effect of a change that has already taken place in one of the ovaries.

The reason, therefore, on the one hand, that menstruation does not occur before the age of puberty is, that up till this period no distinct vesicles are observed in the ovaria; and, on the other hand, that it ceases at what is called the critical age in women, is that these organs then become atrophied and otherwise altered in structure.

The following are the data observed by M. *Gendrin*, and from which these interesting conclusions have been drawn.

A woman, 30 years of age, committed suicide by hanging herself, on the 8th of February, 1828, while the catamenia were upon her.

On dissection, the mucous surface of the vagina and cervix uteri was found highly injected; the uterus contained a sanguinolent mucus, and its internal surface, especially at the fundus, exhibited numerous fungiform villousities of a reddish grey colour, which were best seen under water. The right ovary and Fallopian tube presented nothing unusual; but the left tube was found to be considerably dilated and to contain a reddish coloured mucus, which was most abundant at its open extremity. The ovary too on this side was observed to be highly injected at one point of its surface to the extent of a quarter of an inch; and, in the centre of this vascular spot, there was a distinct fissure or cleft of about a line and a half across, and provided with loose or fringed edges. This fissure led into a small cavity, which might receive a hemp-seed, and whose parietes were of a bright red colour; it was evidently a Graafian vesicle which had become ruptured. Four other vesicles, unbroken, and each of about the size of a hemp-seed, were found in the substance of the ovary.

In a *second case*, which was that of a girl 19 years of age, who died suddenly when menstruating, the appearances in the vagina and uterus were exactly similar to what we have noticed in the preceding case. "The Fallopian tubes were filled with a reddish mucus; the *morsus diaboli* of the right one was applied to its ovary, the surface of which exhibited a highly injected network of bloodvessels, and at one point a minute solution of continuity leading into a small cavity of about two lines in diameter. The vascular network on the surface of the ovary was most distinct and of the deepest colour for two or three lines around the fissure. Three vesicles, two as large as hempseeds and the other of the size of a pin's-head, were found in the substance of this ovary; the larger ones being nearest to its surface, and the smaller one most deep-seated. In the left ovary were observed, at varying depths, five vesicles, each of about the size of a millet-seed: no trace of any cicatrix on its surface was visible. The reddish mucus

contained in the canal and the *morsus* of the Fallopian tube was examined with a powerful magnifying-glass; but nothing like an organised body could be detected."

In a *third* case, which occurred in a woman, 27 years of age, who met with her death from a severe accident on the fourth day of menstruation, we are informed that "the right ovary exhibited two distinct but incomplete (*inachevées*) cicatriculæ—one depressed and umbilicated, and which presented the vestige of a minute central excavation; the other of a yellow hue, and underneath it there was an empty cavity or *loge* of a line and a half in diameter, and whose walls were of a yellowish-red color. Two or three injected capillaries were seen on the surface of the ovary between these cicatriculæ. Five entire vesicles were found in the left, and only one in the right ovary."

In a *fourth* case, a girl of 20 years of age died from pneumonia on the third day after the appearance of the catamenia, which had remained only twenty-four hours upon her.

The cavity of the uterus was occupied with semi-coagulated blood, but only colourless mucus was found in the Fallopian tubes. The right ovary exhibited a minute fissure, beneath which there was a dilated locular cavity of about two lines in diameter, whose edges were red and *tomentose* when examined under water: a narrow vascular areola surrounded the fissure. Only one Graafian vesicle was found in this ovary. The left one, which was unusually small, exhibited no traces either of a fissure or of any vesicles.

The *fifth* and last case, reported by M. Gendrin, is that of a woman, 44 years of age, and mother of three children, who died from apoplexy on the second day after the appearance of the catamenia, which had been always quite regular, and lasted on most occasions for three days.

"The uterus and vagina contained semi-coagulated blood; numerous vascular villositities were seen on the internal surface of the former. The left tube was dilated and full of reddish mucus; its *morsus* was applied to the ovary, on the surface of which was observed a fissure leading into a minute excavation which was filled with a similar fluid. This *locule*, examined under water, seemed to be about a line in depth; it formed the centre of a vascular areola on the surface of the ovary of four or five lines in diameter. Three vesicles were formed in the substance of this ovary. The other one exhibited no appearance of any fissure, and only two vesicles were found in it."

M. Gendrin informs us that he has made numerous examinations of the ovaries in young girls before the age of puberty, and that on no occasion has he ever found any appearances similar to those which we have now described. In three cases only has he observed any vesicles. the girls were above 12 years of age, but had not menstruated, and presented none of the outward appearances of puberty. In these three cases the ovaries, only very partially developed, were found to contain from one to four minute vesicles of the size of small pins'-heads, and which were deeply imbedded in their substance.

M. Gendrin next describes the progressive changes in the structure of the Fallopian tubes and ovaries in women after the cessation of the catamenia,

remarking that, "anatomists are agreed as to the absence of the Graafian vesicles in those who have passed the critical period of life;" and he sums up the results of his examination of the ovaries in menstruating women in the following words:—

"Dissection has repeatedly verified in them the presence of vesicles in the ovaries, (the larger ones being always nearest to the surface,) and the existence of cicatriculæ on their surface in different states of development—from the red vascular cicatriculæ, exhibiting an irregular central depression, to that which is evident only from having a yellowish hue and a slight loss of smoothness and polish of the ovarian surface. Whenever the women have had their catamenia at from one to several weeks before death, I have uniformly found that the cicatricula was most recent and most vascular in those who had most recently menstruated.

In some women, whose catamenia have been interrupted for several months, no vesicles are found in the ovaries, and we cannot discover any trace of cicatriculæ: generally, however, under such circumstances, we observe very small and deeply seated vesicles. Occasionally we observe, imbedded in the substance of the ovaries, cells filled with a brownish-yellow sanies-like matter, resembling a small coagulum partially softened and discoloured."

The inference drawn by our author from the preceding observations is that the function of menstruation is essentially and necessarily connected with, nay rather dependent upon, the development, maturation, and rupture of the peculiar vesicles formed in the ovaries,* and that the immediate cause of the secretion is the plethoric condition of the uterus thereby induced, and the manifestation of vascular villousities on its inner surface.

John Hunter, had long ago remarked the *hyperæmic* state of the uterus, and the tendency to exudation of blood on its surface, in women who had died during menstruation; but it was *Joerg* who first described in these cases the vascular-like villousities to which we have so frequently alluded. But neither of these distinguished writers seems to have been aware that the phenomena were necessarily associated with the rupture of an ovarian vesicle and the destruction of an ovum arrived at maturity.

Such is a summary of the very interesting observations of M. Gendrin on menstruation. It is but due, however, to other authors to observe that these observations are not entirely novel and original. One English writer in particular, and he of no mean note on every subject of uterine pathology—Dr. Robert Lee—has unquestionably preceded him, at least in point of publication.

It is indeed rather strange that no reference should be made by M. Gendrin to the valuable paper by Dr. Lee in the *Cyclopædia of Medicine*, as we have a right to expect that the translator of two of our standard works, Thomson on *Inflammation*, and Abercrombie on *Diseases of the Brain*, should be tolerably well acquainted with British medical literature. But the ignorance on the part of French writers of any literature save their own is so prevailing, that we are unwilling to suspect M. Gendrin of any want of good faith on the present occasion, and we attribute his omissions rather to neg-

* The appearance of cicatriculæ on the surface of the ovaries must therefore, according to this view, be regarded only as a sign of menstruation, and not necessarily of conception, having ever taken place, as has been so long imagined.

lect than to dishonesty. Unquenchable vanity is the besetting sin of the French people; it pervades their every action, whether in war and politics, or in the more peaceful domains of literature and science. Nowhere is it more conspicuous than in the writings of their medical men. At almost every meeting of the Academy of Medicine in Paris, we find that controversies are carried on upon various topics, which to the learned members seem to have all the interest of novelty, but which are known to every pupil of every respectable school in this country. For example, there was a most elaborate discussion last year on the treatment of fever with purgatives, and many of the members talked of the importance of this discovery!—seemingly not at all aware of Dr. *Hamilton's* admirable work published nearly half a century ago. It may therefore be unfair to suppose that M. *Gendrin* was aware of Dr. *Lee's* paper, and that the omission of any reference to it was wilful, but surely the author of a "Traité Philosophique" should make himself acquainted with the works of the more distinguished writers of former and present times. Waving however the question as to priority of discovery, we may remark that the circumstance of more than one writer unaware probably at the time of each other's researches, having come to the same conclusions as to the physiology of menstruation, must be regarded as a strong argument in favor of their accuracy. As the subject is one not only of great curiosity but of practical importance, we shall devote a page or two to a brief exposition of the observations contained in Dr. *Lee's* interesting paper.

After mentioning several circumstances which very clearly point out the intimate connexion between the function of menstruation and the condition of the ovaries—as for example the non-appearance of the catamenia in women in whom the ovaria have been found on dissection to be wanting, and their utter cessation in the remarkable case where Mr. Pott extirpated the organ in an operation for hernia; also the regular recurrence of periodic pains through the pelvis, similar in every respect to those which often attend menstruation, in certain cases where the uterus has been afterwards found to be either entirely absent or only imperfectly developed—and alluding to the curious changes which are known to occur in hen birds in which the ovaria have become shrivelled from disease, he proceeds to detail some very interesting observations which he has made on the anatomical appearances of the ovaria in women, who have died while the catamenia were upon them. The *first* seem to have been made in March 1831* in the case of a young woman who died, while menstruating, from phlebitis.

..... "The left ovary was larger than the right, and at one point a small circular opening with thin irregular edges was observed in its peritoneal coat, which led to a cavity of no great depth in the ovary. Around the opening, to the extent of three or four lines, the surface of the ovary was of a bright red colour, and considerably elevated above the surrounding part of the peritoneal coat. On cutting into the ovary, its substance around the opening and depression was vascular, and several *Graafian* vesicles of different sizes were observed. The right ovary was in the ordinary state. Both Fallopian tubes

* It is but fair to M. *Gendrin* to remind the reader that the first of his observations is dated in the year 1828: the dates of his other cases are not given.

were intensely red and swollen and their cavities were filled with menstrual fluid. The lining membrane of the uterus was coated with the same fluid, and the parietes were soft and vascular."

Nothing can be more satisfactory than these details ; and while they anticipate in the date of publication, they beautifully confirm the observations of M. *Gendrin*. There is one circumstance in the case now mentioned that deserves notice ; the right Fallopian tube contained menstrual fluid, although there was no appearance of rupture on the surface of its ovary. Was this owing to a consentaneous action of the two tubes ? However this may be, we find that again, in Dr. *Lee's second case*, "the free extremities of the Fallopian tubes were gorged with blood, and their cavities were filled with a red-coloured fluid," although the right ovary only exhibited the appearance of a recent fissure or laceration on its surface. In a subsequent case, the details of which are minutely given by the author, and where the opening was found in the left ovary, menstrual fluid was present in the left tube only, although "both tubes were red and gorged."

The inference of M. *Gendrin* that the development and maturation, so to speak, of the Graafian vesicles is in proportion to their proximity to the peritoneal coat of the ovary *seems* to be confirmed by the following observation of Dr. *Lee* in the case, of a woman who died from cholera, while menstruating.

"The ovarium," he says, "was much larger than natural, and at one point there was a small irregular aperture in its peritoneal coat, through which a portion of a slender coagulum of blood was suspended. On cutting into the substance of the ovarium, it was found to be occupied by three small cavities or cysts, one of which was filled with a clear ropy fluid, another with semifluid blood, and the third, which communicated with the opening in the peritoneal coat, with a firm coagulum."

Dr. *Lee* closes his interesting observations with the following wisely-cautious words—

"The facts which have now been related render it extremely probable that all the phenomena of menstruation depend upon, or are connected with, some peculiar changes in the Graafian vesicles, in consequence of which an opening is formed in their peritoneal and proper coats. Whether an entire vesicle, or only the fluid it contains, escapes through this opening at the period of menstruation, further observations may hereafter determine."*

He appends a useful practical hint:—

"In many cases of disordered menstruation, chlorosis, and hysteria which we have observed, the symptoms have been clearly referable to certain morbid

* Dr. *Lee*, it should be mentioned, does not claim to himself the originality of these views. He most candidly admits that, as far back as the year 1797, Mr. Cruikshanks has distinctly recorded that, in the case of a young woman who died with the menses upon her—"the external membranes of the ovary were burst at one place, from whence I suspect an ovum escaped, descended through the tube to the uterus, and was washed off by the menstrual blood." In reference to the latter part of this statement Dr. *Lee* remarks, that "there is no proof whatever that an ovum passes along the Fallopian tube into the uterus during menstruation, and it is not clearly established that this takes place even subsequent to conception."

states of the uterine appendages, and decided benefit has resulted from the application of those local remedies which were employed with the view of subduing the irritation, congestion, or inflammation which appeared to be present in those parts of the uterine system."

From the extracts which we have given from Dr. Lee's paper, the reader must see how perfectly his observations coincide with those of M. Gendrin. Their accuracy is further confirmed by the researches of Dr. Negrier of Angers, who has recently published a small work, entitled "*Recherches Anatomiques et Physiologiques sur les Ovaires dans l'Espece Humaine, considerés specialement sous le rapport de leur Influence dans la Menstruation, p. 130, avec 11 planches lithographiées.*" Professor Negrier claims for himself the priority of the discovery, as he has been in the habit, he tells us, of describing in his lectures for the last nine or ten years the dependence of the catamenial secretion upon certain changes in the ovaries. We are not however aware that he ever published his views till last year. The following is a summary of his work, for which we are indebted to the pages of the *Gazette Medicale*.

The ovarian vesicles in mammiferous animals were usually regarded as representing the ovum in the greater number of animals of other classes, until the period when MM. Prevost and Dumas discovered, in two cases, the ovulum in the interior of the vesicle. The former opinion was not however wholly abandoned till after the researches of Baer, who pointed out the precise spot where the ovulum is observed within the vesicle, and described it very exactly. The subsequent labours of Coste, and also of Valentin and Bernhard, have carried us a step further in our knowledge, by determining the situation of the proligerous vesicle at one point of the ovulum, where it is so extremely minute that it does not exceed 376 ten-thousandth parts (376 dix milliemes) of a line in dimensions.

According to the opinion hitherto generally entertained, the Graafian vesicles are slowly developed in the substance of the ovary, until the moment of conception, when one of them gives exit to an ovulum, which is then conveyed along the Fallopian tube into the cavity of the uterus: the cicatrix, thereby left at the point of rupture, assuming a yellowish appearance, and well known under the name of *corpus luteum*. Great attention has been paid by many pathologists to the characteristic features of these yellow spots, which when distinctly marked have usually been regarded as a certain proof that the woman has at some time or another conceived. The most satisfactory description of the genuine *corpora lutea* will be found in Dr. Montgomery's excellent work on the Signs of Pregnancy, and in Dr. Robert Lee's valuable paper in the 22nd vol. of the *Medico-Chirurgical Transactions*.

In the first chapter of his work, Dr. Negrier describes the gradual and successive development of the ovaria from the earliest periods of life up to puberty; and in the second, the changes which these organs undergo at the first appearance of the catamenia, and during the whole period of fecundity.

From the facts narrated in this latter chapter, it would seem that, at certain epochs, an afflux of transparent fluid takes place into the cavity of the most superficial vesicle; this becomes in consequence distended, and at length gives way at the point where the investing parietes of the ovarium

are thinnest and most yielding. The ruptured point is usually quite cicatrised, at least outwardly on the peritoneal surface of the ovary, in the course of from eight to ten days. The rupture of the vesicle is followed by a slight effusion of blood in its interior from the minute vessels, which have given way. This seems to be very quickly absorbed; as the little cavity is sometimes found empty, and communicating with the peritoneum. The cicatrix subsequently assumes a yellow appearance, which remains for some time. Now these appearances, Dr. Negrier says, are never observed when the catamenial secretion is suspended, as for example, during pregnancy and lactation, or when it has completely ceased, after what has been called the critical epoch of life in women. The conclusion which he draws from his researches is, that the evolution and rupture of the Graafian vesicles is the cause of menstruation, and that all the symptoms of this important function are attributable to the changes that are successively going on in the ovaries, and to the sympathetic irritation in the uterus which is thereby induced. After alluding to the circumstance that, if the uterus of a woman during the act of menstruation be examined, we always observe that the sanguineous congestion of its substance is uniformly more decided on the side corresponding with that ovary in which one of the Graafian vesicles is ruptured, and especially around the opening of the Fallopian tube of that side, Dr. Negrier remarks, "From an extended series of observations, I feel confident in stating, as an indubitable fact, that *in the ovaries of women who have menstruated, of whatever age they may be, vesicular cicatrices never fail to be found.* The catamenial secretion is so completely dependent on the functions of the ovary that, if this organ is not duly developed, it is always retarded; and, if on dissection we find the abortive formation of some vesicles, we may be certain that the returns of the catamenia have been of late irregular and interrupted. Again, if we examine the ovaries of girls, in whom the appearance of the secretion has been precocious, we shall find them more than usually developed, and in every respect like what we observe in women of a marriageable period of life. On the contrary, in those in whom menstruation is tardy and difficult, the ovaries are found to be small, and their parenchyma to exhibit only traces of vesicular evolutions imperfectly developed." At the critical period of life, it is rare that the catamenial secretion ceases all at once; usually its returns are for a period irregular, and the quantity of the discharge varies much, being at one time very scanty, and at another time very profuse. Now the examination of the ovaries at this period of life exhibits corresponding irregularities in the development of the Graafian vesicles: some have evidently aborted before their maturity, and have either remained in the state of grey pouches or cells, (*bourses grises*) or look like yellow vesicles.

We may conclude from this circumstance that the incomplete development has not been sufficient to induce a full re-action in the uterus; and hence is the imperfection and irregularity of the secretion. However, if some of the vesicles attain a complete maturity, the development is tardily effected, and may thus induce that state of plethoric engorgement which causes those profuse hæmorrhages, so frequent towards the close of the menstrual function. One of the cases reported by Dr. Negrier seems to afford strong presumption of the truth of his opinions.

It was that of an unmarried woman, 50 years of age, in whom the hymen

was quite entire, and in whom the catamenia had ceased for about three years before death : the ovaries were found on dissection of the size of almonds, and their surfaces were entirely covered with cicatrices, like deep grooves or furrows : one of them exhibited a small nucleus of the colour and hardness of baked earth.

Having thus occupied so much of the present article with these recently published opinions and observations on the physiology of menstruation, we cannot now spare above a page or two to the notice of some of the other contents of M. *Gendrin's* volumes, which otherwise might have detained us longer.

We have already said that the whole of the first volume, and more than one-half of the second are occupied with a description of the hæmorrhagiæ. We select what the author says of the least common form of hæmorrhagic disease—*Hæmatidrosis*, or exudation of blood from the skin. The chapter on this subject is more complete than any we have met with elsewhere : and, as the disease is seldom treated of in systematic works, we shall give our readers a short account of the most interesting cases collected together by M. *Gendrin*.

Case.—A girl, eleven years of age, was seized with a sharp pain in the right arm, which soon became covered with numerous pustules. A few days afterwards blood was observed to ooze from their surface ; and then they all disappeared without leaving any marks. The next month the same symptoms returned, and these were quickly followed by the first appearance of the catamenia. The following month, there was a similar return of these phenomena, and in the same succession. For some time afterwards there was no-reappearance of the hæmorrhage from the arm ; but during the following winter, whenever the fingers of the right hand became very cold, blood oozed from their tips, although there was not the slightest trace of any crack or wound in the skin. By merely warming the hand, the oozing was stopped, and, as spring approached, this curious tendency to hæmorrhage ceased altogether. For four months the catamenia returned regularly ; but they then ceased. Again the oozing of blood from the right fingers returned, sometimes every or every second day, and at other times only every eight days. It was impossible to detect any orifice from which it flowed. Some time after this date, the girl was seized with vertigo, flushing of the face, tumefaction of the neck, &c. These symptoms were succeeded and relieved by an oozing of blood from several points on the front of the neck. At another time, epistaxis came on, which did not cease until again the neck began to swell, and the oozing of blood from its surface to return. On the same day a bloody fluid exuded from the skin of the right arm, and from the calf of the left leg. At this period the catamenia had been absent for several months, and the girl was subject to a variety of sufferings such as cramps, partial paralysis, &c.

On one occasion, the left eye became anaurotic, and the tears from this eye were sanguinolent. On another occasion, the skin of the nose exuded blood, and this was followed first by epistaxis, and then by hæmotysis. Subsequently there was an oozing from under the nails of the right hand, and from the skin of the right arm : and this, some time afterwards, was

followed by a trifling hæmorrhage from the left eye, and the skin of the right hand.*

A curious case is related by Dr. *Boivin* in the *Dictionnaire des Sciences Med.* t. iv.

A middle-aged woman, after a blow on the stomach, was attacked with hæmatemesis. For fifteen years, the hæmorrhage returned at shorter, or longer intervals. At length it ceased, after the administration of some powerful astringent medicines. But now ensued an exudation of blood from various parts of the surface of the body and limbs;—from the front of the chest, the back, the thighs, legs, feet and toes. The catamenia at this period were quite regular in their return. While this cutaneous exudation continued the woman felt well; but she was immediately affected with various distressing feelings when it ceased. A pruritus in the part usually preceded the oozing from the skin. The woman was 48 years of age when Dr. *Boivin* saw her, and it was then nearly three years since the first appearance of this singular cutaneous discharge. The catamenia had ceased for about two years, but the cessation of these had not affected the recurrence of the Hæmatidrosis. It was chiefly from the scalp, the upper part of the chin, and from about the angles of the jaw, that the oozing took place, when this gentleman wrote. Twice during the day the patient felt a sense of heat and an itchiness in these parts; the skin became then somewhat swollen, and blood oozed from its pores in large drops. The health of the patient seemed entirely good.

In the same work is narrated the case of a middle-aged man, whose constitution had been much enfeebled by intense study and mental distress, and in whom, after a sexual debauch, the thighs, axillæ, pubis, and particularly the penis itself, became excessively painful. From all these parts, especially from the glans, blood oozed out in a stream. This hæmorrhage returned every fortnight or three weeks for the next 20 months, and usually lasted for two or three days at a time. The issue of the case is not given.

The next case occurred in a man 28 years of age. One evening he had drunk wine to excess, and had remained all the following night in a state of intoxication; he had vomited several times. Next morning, after a violent fit of rage, he felt a dull pain, accompanied with pruritus, on the left side of the chest near the armpit. On applying his hand to the part, he was surprised to find it covered with blood. He went immediately to the Hôpital de la Pitié, and we (*M. Gendrin* ?) found that the blood was flowing in drops from the surface of the left armpit and the adjoining part of the chest. When wiped clean, the skin was observed to be slightly swollen and red. The drops of blood formed slowly; they were almost confluent, and soon joined together. This cutaneous hæmorrhage continued the whole day; so that the quantity of blood lost amounted, it was believed, to three pounds. There was no fulness of the pulse, nor any disturbance of the general health. Next day, the hæmorrhage had ceased, and the man seemed quite well.

Occasionally this form of hæmorrhage, Hæmatidrosis, is observed in young

* *Van Swieten*, Comment. in *Boerhaave*, Aphor. t. iv.

infants. The following case is reported by M. Eggerdes. An infant, three weeks old, had become very much emaciated, when one morning the sleeve of its shirt was found spotted with blood, although no trace of any wound or injury could be seen. The child seemed better, and sucked with more strength than it had done before. Next day the right arm was found covered with blood. This sanguineous exhalation continued for the following five or six days; and each day the child's health seemed to be improved. The left arm then became the seat of a similar hæmorrhage, which continued for a few days: ultimately the little patient recovered perfectly.

As illustrative of the occasional causes of sanguineous exudation, we may mention that Leroux alludes to the case of a man, employed at the porcelain manufactory at Sevres, whose perspiration became quite sanguinolent whenever he exposed himself to the heat of the furnace. Violent muscular exercise will sometimes produce the same effects. Latour tells us of a man in whom fencing brought on an exudation of blood from the surface of the body; and in the Ephemerides Nat. Cur. we read the case of a young girl, who, after excessive dancing, was similarly affected. Strong mental impressions have been known to act in the same way. (The record by the Evangelist of the Agony in the Garden, that "He sweat, as it were, great drops of blood," may have been literally true.) Excessive pain also will give rise to this curious disease. Thus Dr. Caizergues has related the instance of a woman, in whom, while suffering under severe nephritis, drops of blood oozed from the skin of the face and of various parts of the body. The most frequent cause however of Hæmatidrosis is certainly suppression of the catamenia. In the majority of cases, the hæmorrhage has been more or less distinctly periodic, and has gradually ceased, when the menstrual function was restored to a healthy state. The disease does not require any specific course of treatment. Its cause should, as a matter of course, be first ascertained, and by removing it and bringing the general system into a healthy state, the cutaneous hæmorrhage will gradually subside, and ultimately disappear.

From the extracts which we have given from M. Gendrin's work, it will be perceived that it is by no means destitute of valuable information. As a whole, it does not please us; in parts, it is excellent.

TRAITE CLINIQUE DU RHEUMATISME ARTICULAIRE, &c. Par J. Bouillaud. Octavo, pp. 554. Paris, 1840. J. B. Bailliere.

ALTHOUGH the previous work of M. Bouillaud, of which the present one may be considered as only an enlarged and amended edition, was reviewed at considerable length a few years ago in this Journal, our practical readers will probably not deem a few pages needlessly occupied if we again call their attention to the subject of Rheumatism—one of the most common, and yet one of the least thoroughly understood, ills that man's flesh is heir to. This assertion may be considered by some to be somewhat hasty and inac-

cure; but if we consider for a moment the discrepancy of treatment recommended by many of the ablest physicians of the present day, not to allude to those of former times, it will be admitted that it is not so groundless as at first view may be supposed. And can we wonder that the treatment of any disease should be so undecided and fluctuating, when we call to mind that its pathology—or proximate cause, to use the language of our forefathers—is so little understood? In what other malady, except perhaps in typhus fever and neuralgia, has the treatment been more empiric and unsteady? While one physician recommends bleeding, mercury, and other antiphlogistics, another trusts chiefly to colchicum or guaiacum, and a third assures us that cinchona may be regarded as almost a specific. Surely it cannot, we might suppose, be in one and the same malady that remedies, so essentially different, are found to be equally, or nearly equally useful; unless indeed the character or type of rheumatism, like that of typhus, varies in different seasons, and is subject to the operations of the medical constitution of the air, the state of health of the patient, &c.—influences which it is unquestionably necessary to attend to in the study and treatment of all manner of fevers. But few, we believe, will be inclined to adopt this opinion; and yet it must be acknowledged that such is but a fair inference from the conflicting statements of medical men, in reference to the most successful mode of treating rheumatism. As this is a subject which has occupied much of our attention for several years past, it is possible that we may succeed in throwing a little light upon the difficulties which surround it, and that we may reconcile, at least in part, the striking differences of opinion entertained by different writers. Even although we may not get others to agree with us, the exposition of our own views will probably excite others to canvass more attentively the question at issue; and thus the cause of truth and of sound medical practice cannot fail to be essentially promoted. As it is not however our purpose to write an essay upon rheumatism, but to review briefly M. Bouillaud's new work, we shall only append our remarks in the way of commentary on the leading positions which he so energetically strives to enforce. These are the following:—

1. That acute, or as he prefers to call it, articular Rheumatism or Arthritis is invariably and essentially an inflammatory disease; that the inflammation has nothing specific in its nature, and that it is liable, like other forms of phlegmonous disease, to terminate in resolution, the effusion of lymph, supuration, and ulceration.

2. That the primary seat of the inflammation is in all cases the synovial membrane of the joints, the other tissues of the joints and limbs being only secondarily affected.

3. That in almost every case of acute rheumatism, there is a *coexistent* inflammation of the lining membranes of the heart, or in other words, pericarditis and endocarditis.

4. That acute rheumatism should be treated, as all the other active Phlegmasiæ, by vigorous depletions of blood and the use of other antiphlogistic remedies; and that, by adopting his *nouvelle formule* of bleeding *coup sur coup*, the disease may generally be cured in from one to two weeks.

Before offering any comments on these positions, it is proper to observe that M. Bouillaud's work does not profess to be a complete treatise on rheumatism; it is limited almost entirely to the consideration of the *acute*

form of the disease, or to what is frequently denominated, both in France and England, rheumatic fever. In this respect the work is very incomplete—as it takes only a partial view of the disease, and thus neither does justice to the subject, nor fairly enables the reader to form any conjecture in what light the author regards those very numerous cases, generally of a *chronic* nature, which are classed together, in ordinary language, under the generic term of rheumatic.

But M. Bouillaud, it is well known, is one of those impetuous vehement characters, who seize upon a favorite opinion, and invariable carry it à l'outrance. He may be truly called a man of a single idea in the practice of medicine; his mind is ever occupied with the idea of inflammation, and his treatment of almost every disease seems to consist in bleeding, bleeding, bleeding. Whoever is in the habit of perusing the French periodicals of late years, knows how largely he has contributed by his clinical reports to the diffusion of the Broussaiian doctrines: and being a quick and vivacious writer, he has acquired a notable reputation among the ardent spirits of La jeune France medicale.

The disease, Rheumatism, conveys no other idea to his mind than the existence of a phlegmonous inflammation in certain tissues of the body; and its treatment therefore, according to this view, requires nothing but the usual antiphlogistic remedies. He seems to be not at all aware that there may be different *kinds*, so to speak, as well as different *degrees* of inflammatory action; and yet every reasonable writer, if he has been long conversant with clinical practice, must admit the truth of this statement. Is there not the phlegmonous, the scrofulous, the syphilitic, the rheumatic, and the gouty inflammation? The essential or *generic* nature of these various forms of the disease may be the same; probably it is; viz.—an obstructed state of the capillaries of the inflamed part, and an increased action of the larger arteries leading to it. But each form has its specific peculiarities, by which it differs from all the rest—peculiarities which depend upon the differences, whether congenital or acquired, of the constitution of the patient, or, in other words, on the state of the fluids and solids of the body.

Phlegmonous inflammation, as every one knows, has a marked tendency to terminate in suppuration: so likewise has the *scrofulous* inflammation, although the suppurative action which follows it has many peculiar features.

On the other hand, the tendency of *syphilitic* inflammation is to induce a peculiar ulceration, accompanied with imperfect suppuration; while the characteristic termination of the *rheumatic* inflammation is unquestionably the effusion of coagulable lymph, and that of the *gouty* inflammation is the desposition of lithic acid either around the joints or in the urinary passages. Such is the usual course of these different kinds of inflammatory action; but as there is no medical law without numerous exceptions, and as diseases are seldom uncomplicated and simple in their nature, we may *à priori* be assured that in numerous cases an existing inflammation will partake of the characters of more than one of these forms.

Thus the scrofulous inflammation sometimes approximates very closely to the phlegmonous: or it may be blended with the syphilitic, giving rise, as every one knows, to a very unmanageable form of disease. Again, the rheumatic inflammation seems sometimes to differ little from the phlegmo-

nous in the consequences which it produces, being then followed by the partial formation of purulent matter; and at other times—and this is much more frequently the case—it is co-existent with gouty disease, and then it constitutes what is usually called *rheumatic gout*.

Let us now see whether we can form any reasonable conjectures as to the cause and nature of the specific differences in these different kinds of inflammatory action.

To arrive at any accurate conclusions on this very interesting and most important subject, more attention must be given to the state of the blood, and of the secretions from it, during the progress of disease than has hitherto been done. Physicians in all countries are beginning to be more and more impressed with the necessity of admitting a *regenerated* system of Humoral Pathology; the *solidism* of the schools during the present century has been pushed to an extravagant length, and begins to share the fate of every other exclusive dogma in medicine.

Consider for a moment the condition of the blood in *genuine* rheumatic inflammation. Is it not charged with an excessive and a most abnormal quantity of fibrine or coagulable lymph? On the other hand, is not the blood, which is drawn from patients labouring under scrofulous inflammations, usually thin and watery, with an excess of serum and a deficiency of clot? In these two kinds of inflammation, we find the *extremes* of richness and poverty in the circulating fluids; phlegmonous inflammation being, in this respect, *intermediate* between the two.

That the peculiarities of syphilitic inflammation may be attributed to the existence of a specific poison in the blood, will not be denied by any one; although we must confess that as yet we do not at all understand how this operates, or whether it produces any appreciable changes in the fluids; and it seems equally obvious that those of gouty inflammation are intimately dependent upon the presence of an unusual quantity of acid in the circulating mass; as may fairly be deduced from the chemical condition of the urine and other secretions, and the acknowledged efficacy of alkalinic medicines in the cure of the disease.

As our chief object at the present moment is to endeavor to explain the phenomena of Rheumatism—*chronic* as well as *acute*—we crave our readers' especial attention to the peculiarities of the blood in the genuine rheumatic and the genuine gouty inflammations—in the one, the blood being charged with an excess of its fibrinous portion, in the other being, so to speak, impregnated or poisoned with an acid matter.

An important question is, How are these morbid states induced? A good deal of error prevails upon this subject.

It is a common opinion, that attacks of acute rheumatism are often sudden and unpreceded by any premonitory symptoms. We believe that this is quite a mistake. If the history of any case of this disease be attentively

* In estimating the proportion of the serum and the clot, we must not be guided by the simple inspection of the blood, after it has coagulated; as the clot in thin watery blood often seems to be of large size, in consequence of its retaining a quantity of the serum within it. Its firmness and resistance to the finger should always be attended to.

enquired into, it will be always found that for several weeks, or even months previous to the seizure, the patient has been affected not only with flying pains in several of the joints, but also with headache, with vertigo and flushing of the face, not unfrequently with cough and sense of tightness about the chest, and with a general feverish state of the system, denoted by thirst and disturbed sleep, a constipated state of the bowels, and a scanty secretion of urine, which is moreover deep-coloured and of an unusually strong smell. The digestive organs do not ordinarily suffer; hence the appetite remains tolerably good, and the patient continues to live on a full diet, taking animal food once or twice daily, and drinking his beer or wine as usual. Although he feels himself not quite well, he is not *malade* enough to be confined to the house, and he therefore strives to shake off his symptoms of *malaise*, either by living more freely or by taking more than his usual exercise. Now during all this time the blood is becoming richer and more fibrinous, in consequence of the secretions being diminished; while the quantity of chyle, that is introduced into it, is as large as ever. Were the patient at this time bled, put on a low diet, and well purged, he would speedily be relieved of all his unpleasant symptoms, and spared, in all probability, the attack which is awaiting him.

But this is not done; and things go on as before, till, being exposed to wet and cold, he is seized with smart fever, and all the well-known symptoms of rheumatic fever make their appearance. The attack may seem to be sudden and unexpected; but, on further enquiry, the physician will always find that the patient has been far from well for several weeks previously. Indeed the very circumstance of the blood having acquired such an abnormal quantity of fibrine—which, be it remembered, is the very constituent of the blood which is most slowly augmented—might lead the pathologist, independently of the other phenomena of rheumatism, to the belief that the development of the genuine disease cannot be effected in the course of a day or two, as may unquestionably be the case with certain of the *regular* phlegmonous inflammations, such as bronchitis, cynanche, &c. It is quite true that a patient, who was going about yesterday, may be confined to-day with severe rheumatic fever, in consequence of exposure on the preceding evening to cold damp weather:—but then the train was already laid, and it only required the spark to be applied to occasion the explosion of the disease. In many cases, an explosion never takes place; and then the patient continues to be harrassed more and more with flying erratic pains, alternately better and worse with every fluctuation of the weather, while some internal organic lesion is most probably establishing itself. We are convinced that many of the most formidable changes of structure in the viscera, more especially in the organs of circulation and of the brain, are owing to this *rheumatic diathesis*—the hæmitis or inflammation of the blood of M. Piorry and other writers. Every physician knows how intimate is the connexion between rheumatism and organic diseases of the heart, and yet no satisfactory explanation has been given of this remarkable connexion. M. Bouillaud indeed talks much of the strict analogy of character in the tissues of the heart and of the joints, and he goes so far as to call the pericardium a sort of synovial capsule! But this analogy is much more in his words than in the thing itself. It has frequently occurred to us that we may solve the question, if we reflect that the blood in rheumatism is charged with an excess of

fibrine, and that it must therefore have a stronger tendency, than in health, to the deposition of coagulable lymph on the inner surface and on the valves of the heart's cavities. M. *Bouillaud* asserts, and he is quite right, we believe, in his assertion, that the pericarditis and endo-carditis, which so frequently complicate the presence of acute rheumatism, are co-existent with, and not subsequent to, the affection of the joints—in other words, that there is not so much a *metastasis* as a *coincidence* of the two diseases; now this is just what we might have expected, seeing that both seem to be connected with the same condition of the circulating fluids.

..... So much for what is, in our opinion, the primary or proximate cause of genuine and uncomplicated rheumatic inflammation—an inflammation whose essential *humoral* character is an excessive predominance of fibrine in the blood. But then the genuine unadulterated disease is probably rarely met with, except in young healthy subjects, who are affected for the first or second time with acute rheumatism. Whenever the disease has recurred frequently, or has been of long duration and has already become chronic, and especially if this occurs in adult age, it is almost always complicated either with Gouty inflammation, or with some form of Neuralgia. It is this complication of different morbid states that will be found to constitute the true character of numerous cases of Chronic Rheumatism, and attention to which will explain the reason of their extreme inveteracy, and their obstinate resistance to remedial treatment. The blood either is, or has been, (and in this latter case, the ligaments of the joints, and the fasciæ, &c. have already become thickened and otherwise altered in texture), surcharged with fibrine; in addition to this state, there may be a greater or less predominance of acid in the system: and lastly there may be superadded, at the same time, some form or another of neuralgic suffering. To prove the existence of the gouty disease, we have only to test the urine with litmus paper, which will be more deeply reddened than in health; and with respect to that of neuralgia—since we know little or nothing of the state of the nerves on which it depends—we may fairly appeal to the excellent effects, in numerous cases of chronic rheumatism, of those very remedies which are known so often to relieve all painful affections of the nerves—such as sedatives, bark, arsenic, &c.

The appellation of Rheumatic Gout therefore—gouty rheumatism would be a more appropriate term—to many cases is, we believe, strictly correct; the elements of both diseases being co-existent in the constitution of the blood at the same time, and the successful treatment depending upon a due attention being paid to the removal of this complication. In other cases, neuralgic sufferings are associated with the rheumatic pains; the peculiarities of each case under this head varying according as the one or the other predominate. There is always reason to suspect this latter complication, when the pains are exceedingly sharp and darting, but remittent, when their severity is much influenced by the condition of the weather, and when temporary relief is derived from the use of stimulant sudorifics and sedatives.

Lastly, all the three morbid states—the rheumatic, the gouty, and the neuralgic—may be co-existent in the same case; and according as one or other of these states prevails, so will the case be found to exhibit more of a rheumatic, or of a gouty or of a neuralgic character. The discriminating

features of this *double* complication it is scarcely necessary to allude to, as they may be easily inferred from what we have already said.

By attending to these simple suggestions, the practitioner will often be enabled to accommodate his remedies to the peculiarities of each case; but, as we shall recur to this subject when we come to describe the treatment of rheumatism, we shall drop it for the present, and proceed to offer a few comments on the four positions, which embody the substance of M. Bouillaud's treatise.

The *first* of these—that acute rheumatism is simply a phlegmonous inflammation of the synovial capsules and of the other appendages of the joints, and that like other phlegmonous inflammations it may terminate in suppuration and ulceration—is not strictly correct. We have already pointed out what seem to us to be the peculiarities of rheumatic inflammation; and with respect to the latter part of the position, that it is liable to terminate in suppuration, we need scarcely remind the reader that this is only of occasional and of very rare occurrence. M. Bouillaud indeed has published the reports of no fewer than between thirty and forty cases of what he considers genuine rheumatism terminating in suppuration. But a large majority of these cannot be regarded as instances of any form of rheumatism.—What other writers have described under the term purulent diathesis, M. Bouillaud classifies under the head of rheumatism; and by bringing all together, he has succeeded in producing a famous long list of cases to maintain his position.

But such is the besetting sin of our author upon all occasions—a fondness for generalization from inaccurate principles. To do however all manner of justice to him, we shall extract a few of his cases.

Case.—A soldier, while recovering from what seems to have been synochus, imprudently exposed himself to cold, and was seized with a return of fever, which was accompanied with violent pains in the joints, more especially in the knees. This was on the 17th of August, and he died on the 26th. On dissection, most distinct traces of endocarditis in the left side of the heart were observed: the lining membrane of the ventricle, its valves, and of the aorta was of a deep red colour, and several fibrinous and albuminous coagula were found in the cavities of the heart. The internal surface of the vena portæ, and also of the crural artery and of the internal saphæna vein, exhibited marks of inflammation. (It is stated in the report that M. Regnault had prognosticated during the life of the patient the existence of inflammation of the vessels in addition to acute rheumatism. Query: What are the symptoms of such a complication?) *A large quantity of yellow well-formed pus was found in the knee-joints, the synovial membranes of which were red and thickened.*

Case.—A young soldier, recently discharged from the Val de Grace Hospital, cured of bronchitis, was re-admitted within a fortnight in consequence of a relapse. Two days afterwards the left wrist-joint became swollen and painful, and two days later the right knee, &c. was similarly affected. There had been a well marked fit of shivering before this second seizure. On the 21st (three days subsequently) the left knee and ankle-joints became painful and swollen: the constitutional symptoms seem to have been typhoid. The

patient became delirious, and died on the 26th—ten days after the first appearance of articular disease.

Dissection.—All the affected joints were found full of a thick yellow pus; this was observed also in the sheaths of the flexor tendons of the left forearm, and the interstices of the fibres of the triceps muscle of the thigh: the articular surfaces did not exhibit any abnormal appearances.

The propriety of regarding this case as one of genuine rheumatism cannot surely be admitted: the next, however, is rather more satisfactory.

Case.—A soldier was admitted into the Military Hospital at Strasbourg with an attack of most severe articular rheumatism. The pains were most violent in the knees, which were outwardly red and much swollen: the shoulders and wrists were also swollen, but in a less degree. On the fifth day of the seizure, the disease concentrated itself on the knees; the pain in the other joints having ceased. Next day, all the nervous symptoms were aggravated, and on the eighth day the patient died delirious.

Dissection.—*Both knee-joints were outwardly much swollen. No sooner was an opening made into their cavities, than an immense quantity of pus flowed out: the synovial membranes were red and thickened.*

The only other case which we shall give is doubly interesting, on the one hand, from being reported with more than usual accuracy and minuteness, and, on the other, from being drawn from the practice of M. Chomel, between whom and M. Bouillaud there is a keen war of opinion as to many of the leading points in the history of acute rheumatism.

Case.—A middle-aged woman, of a healthy constitution, was admitted into the Hôtel Dieu, on the 3d November. For eight days, she had been suffering with severe pains in all the joints, more particularly in the shoulders and knees. Next day she was freely bled and put upon a low diet. As the pains were not relieved, she was treated with large doses of tartar-emetie, according to the Italian method. On the 11th, the pains had left the joints, but the patient was distressed with severe colic and nausea, and the pulse was extremely languid. Next day the abdominal suffering was exasperated, and was attended with profuse diarrhœa. The patient died in the course of the evening.

Dissection.—The joints exhibited traces of well-marked inflammation: they were all filled with a thick synovia, which was of a yellow colour, turbid, gluey, and resembling concrete oil, or rather the spermatic fluid, if that was coloured yellow. The synovial surfaces were more or less red at several points. The pericardium contained two or three spoonfuls of slightly turbid fluid. Its inner surface was somewhat reddened and injected, and here and there exhibited spots of albuminous deposition.

We have already stated that most of the remaining—nearly thirty—cases, adduced by M. Bouillaud to prove that acute rheumatism may terminate in suppuration of the affected joints, are far from being satisfactory: most of them, unquestionably, cannot be regarded as examples of *genuine* rheumatism. For example, six of them occurred during the puerperal state, and on dissection in some of these all the traces of metritis, accompanied with suppuration of the uterine veins, were found. Surely no pathologist,

except our author, would regard such cases as belonging to *genuine* rheumatism.

In another case which occurred in a man who died with hydrothorax, and who for a week or two before death had been affected with severe pain in the right knee which was much swollen, a vast abscess was found on dissection among the muscles of the thigh, and a quantity of puriform matter in the capsule of the knee-joint.

Such a case can only be viewed as one of local arthritic disease, and has scarcely any thing in common with the essential characters of acute rheumatism. The same remark is applicable to several of the other cases reported at length, by M. Bouillaud, who, with his usual zeal to establish a favourite doctrine, has admitted not a few instances of disease without much regard to pathological accuracy.

It is well known that in some cachectic states of the system—as, for example, after wounds and injuries, as well as during the puerperal state, and during phlebitis, and erysipelas—there is a peculiar tendency to an unhealthy inflammation of the joints taking place, and to the formation of purulent deposits in their cavities, and also in some of the parenchymatous viscera of the body. Our author indeed seems to be quite aware of this objection; but, with his characteristic skill in controversial fencing, he tries to evade its force, by telling us that rheumatic inflammation sometimes affects the internal surface of the bloodvessels, and that, in the cases we have alluded to, there was a rheumatic phlebitis or arteritis present. We may admire the ingenuity of the defence, but we cannot admit its force.

Let it not, however, be imagined that we withhold all praise from M. Bouillaud; we cheerfully acknowledge that he has contributed to throw some light on the pathology, still very obscure, of rheumatism, by bringing together the 37 cases, which he has reported; and although most of them must unquestionably be put *hors de combat*, we admit that several of them may fairly be regarded as examples of rheumatism terminating in partial suppuration of the affected joints.

And can we wonder at such an occurrence occasionally? Assuredly not; for, although suppuration is a rare sequence of rheumatic disease, cases do occur, where, from the influence of particular states of the constitution, or, from the protracted duration of the disease, or from the operation of remedial agents that may have been used, or, lastly, from the co-existence of other morbid states in the system at the time,* the inflammation partakes much of the character of ordinary phlegmonous inflammation. We have already distinctly stated that, in a great number of cases called rheumatic, the disease is not simple, uncomplicated rheumatism, but a complex morbid state, the existent inflammatory action varying in its characters, and being associated, or not, with neuralgia at the same time. On the whole, therefore, we are bound to assent to the hitherto generally received doc-

* M. Bouillaud gives it as his opinion, that the chances of a suppurative termination are proportional to the severity of the preceding rheumatic inflammation—a doctrine certainly not at all warranted by experience. Perhaps, indeed, the very reverse of this doctrine would be nearer the truth.

trine, that suppuration and ulceration are very rare, although certainly occasional, consequences of acute rheumatism. They have been usually observed in cases of very long duration, and when the disease has for some time fixed itself upon one joint in particular.

With respect to the *second* position of M. Bouillaud, that in acute rheumatism the synovial membranes of the joints are the parts primarily and essentially affected, we shall not detain the reader long. Unquestionably in a large number of cases this is strictly true. But that the aponeuroses or fasciæ of the muscles also, if not the muscular tissue itself, the bursæ mucosæ and the sheaths of the tendons are very often from the first the seat of the disease, cannot be denied. Some excellent practical writers have distinguished two forms of acute rheumatism—the *fibrous*, in which the aponeuroses, tendons, and muscles are chiefly affected, and the *synovial*, in which the lining membranes of the joints are primarily and essentially involved; and they have shewn that these two forms of the disease require certain specialities of treatment, to which we shall presently allude.

The *third* position of our author, that in the majority of cases of acute rheumatism there is a *coincidence* of pericarditis or endocarditis, or of both, is one of great interest, and explained and illustrated by him with much ability and zeal.

"Of 114 cases of acute articular rheumatism," says he, "of which we have kept a most minute record, in 74 the symptoms were severe, and in 40, they were much milder. Now of the 74, the coincidence of endocarditis or of endo-pericarditis was ascertained in 64 beyond doubt; whereas in the 40 cases there was not one in which this coincidence could be detected."* M. Bouillaud will not allow that in any case a genuine *metastasis* or *translation* of the inflammation from the joints to the heart ever occurs. Here again we have another instance of his fondness for extreme opinions. Because, in a number of cases, the affection of the joints and that of the heart are coincident or co-existent, he insists that the disease is never suddenly transferred from the former to the latter; although he afterwards acknowledges that "sometimes the endocarditis and the pericarditis appear subsequently to the affection of the joints, and, at the period of their development, this (the articular affection,) becomes very sensibly diminished;" adding, "but this does not authorize us to say that there is a veritable *metastasis*, as it rather seems in such a case that the affection of the heart acts, so to speak, like a *blister*!"

The following admirable remarks by M. Andral, taken from his notes on Laennec's immortal work, while they do all manner of justice to the merits of our author, stop short of his *exclusivism*.

"The researches of M. Bouillaud have shewn that there is a much more frequent *coincidence* between rheumatism and certain affections of the heart, than had been suspected before. In the present day we can no longer doubt that, in a great number of cases of acute articular rheumatism, the internal membrane of the heart has a singular tendency to become inflamed. . . . For my own

* He adds that, in more than one-half of 300 cases of organic disease of the heart, examined by him, the patients had been affected at some previous period with rheumatism.

part, I no longer question the important influence of acute articular rheumatism in the production of acute diseases of the heart. On the one hand, I am convinced, by attentive investigation, that a considerable (*assez grand*) number of persons affected various lesions of the heart have at some antecedent period suffered from acute rheumatism, and that it was from, or shortly after, this date that they began to experience some uneasy feelings in the cardiac region: and on the other hand, having in a number of rheumatic patients watched the state of the heart day after day, I have in some measure heard the affection of this organ rise under my ear. At first, in some cases during the existence of, and in other cases after the cessation of, the articular pains, we perceive a blowing sound, which, feeble at its commencement, becomes daily more and more distinct. At this period, there is generally neither pain, nor palpitation, nor dyspnoea: subsequently, these two last symptoms make their appearance, and denote in most cases an incipient hypertrophie of the heart, which is the result of the endocarditis—the primary lesion induced by the rheumatism. I have seen other cases where, several years after an attack of acute rheumatism, no other morbid symptom of the heart, except a blowing sound, could be detected. In such a case we must admit that there is a contraction of one of the orifices of the heart, unaccompanied (which is very rare) with any thickening of its parietes or any enlargement of its cavities.”*

It is unnecessary to dwell further upon the extreme importance of early attention to the occurrence—whether this be alarmingly rapid, or insidiously slow—of any thoracic distress during, or for some time after, an attack of acute rheumatism.

If, under such circumstances, any degree of dyspnoea comes on, or if a feverish restlessness, increased at night, continues after the cessation of the articular pains, there is reason to suspect that some mischief is going on in the heart or lungs, or in both of these organs. Should prompt relief not be given, and especially if the error be committed, unfortunately not an unfrequent one, of attributing the symptoms to debility and spasm,—in consequence, perhaps, of the debility of the pulse and the occasional intermission of the dyspnoea—and treating them as such, the chances are that the patient will be lost †

We have left ourselves but little space to comment on the *last*, and the most important position—that which respects the treatment of the disease.

The plan, which M. *Bouillaud* usually follows, is to bleed his patients

* In the *Medico-Chirurgical Review* for October 1827, will be found some remarks which, while they anticipate, strikingly confirm these observations of M. *Audral*. In one sentence it is stated:—“For many years past we have paid considerable attention to diseases of the heart; and, on minute enquiry, we have found that in the majority of cases there had been one or more attacks of acute or sub-acute rheumatism primarily. *There may be no direct metastasis at the time the acute rheumatism occurs—but the disease of the heart often steals on afterwards, without any other ostensible cause than the rheumatic diathesis.*” —p. 346.

† In the *Foreign Periscope* of our present number will be found the report of a most interesting case, from the private practice of M. *Bouillaud*, which illustrates in a very striking manner the danger of inaccurate diagnosis, and at the same time the success which often attends the adoption of the vigorous antiphlogistic treatment.

twice on the day that he first sees them, and then once every succeeding day, independently of leeches and cupping, until the active symptoms are subdued. The average quantity of blood, drawn in severe cases, may be stated at from five to six pounds in the course of three or four days; and in less severe cases about four pounds and a half in between two and three days. In some unusually severe cases, as much as eight, nine, or even ten pounds of blood have been drawn, before the resolution of the symptoms was fairly established: "but" adds M. *Bouillaud*. "I have lost none of those patients in whom the disease had attained *this extreme gravity*, by adopting *this extreme remedy*." The auxiliary or adjuvant means, which he recommends, are poultices, blisters, and afterwards moderate compression with bandages and pledgets smeared with mercurial ointment, or wetted with an astringent wash. "Opium, administered either inwardly or endermically, low diet, and diluent drinks, complete the list of our principal adjuvant remedies."

The effect of the treatment now recommended is, we are told, "to reduce the mortality of the disease to Zero; to prevent its lapsing into a chronic state, and also the insidious development of cardiac disorder; and, lastly, to abridge its average duration from six or eight to one or two weeks."

As to the treatment of the *chronic* forms of rheumatism, recommended by M. *Bouillaud*, it consists in general and local bleeding, although to a less extent than in the acute disease, and in the use of blisters, moxas, opiate preparations, internally as well as externally administered, vapour or sulphurous baths, and compression of the joints.

It is scarcely necessary for us to express our opinion as to the great defects of our author's *treatment* of rheumatism, whether acute or chronic. It will be observed that some of the most potent remedies are not even mentioned by name—as mercury, iodine, colchicum, and guaiacum. The extravagance of his bloodletting practice must at once be denounced as decidedly most injurious. It is rarely necessary to bleed from the arm oftener than twice or thrice at the utmost, provided we resort to the use, at the same time, of some of these internal remedies. From the almost specific effects of *mercury* in arresting inflammatory action, and in acting somehow on the constitution of the blood itself—rendering it less viscid and counteracting the tendency to fibrinous depositions—it forms one of the most potent of all anti-rheumatic remedies. The great objection to its use is the exceeding annoyance of the salivation that is so apt to be induced; but, in spite of this inconvenience, we believe that it should seldom be omitted in the treatment of acute rheumatism.

Iodine also, more especially its salt, the hydriodate of potash, is another excellent remedy. There is reason to believe that its action on the system is similar in many respects to that of mercury, although it is decidedly inferior to it in efficacy.

The Guaiacum mixture of the Pharmacopœia, used freely after bloodletting and purging, has been tried very largely by Dr. *Seymour* of St. George's, and found by him of almost unerring success in the severest forms of acute *fibrous* rheumatism: it acts as a general evacuant, provoking perspiration, purging, and a copious flow of the urine. The colchicum, another powerful remedy, is better suited for cases of the *synovial* form of the disease. Cicchona is always a precarious, and often a most pernicious, medicine in

acute rheumatism ; in enfeebled constitutions however, it, and especially quinine, may be administered along with mercury or guaiacum, to enable the system to bear the effects of these remedies. Opium cannot be trusted to alone, or be safely used at the commencement of the diseases as recommended by some physicians ; although it is certainly the most powerfully efficient of all remedies, when the violence of the inflammatory action is arrested, and when the pains have become rather of a spasmodic than of a phlogistic nature ; under such circumstances, a grain of opium every four or six hours will often act as a charm.

In adapting our treatment to each case, we should always keep in mind the morbid condition of the blood that is present in all. While it is surcharged with fibrine, bleeding, with the usual antiphlogistic remedies, and the use of mercury, iodine, and such a general evacuant as guaiacum, constitute by far the most efficient and certainly successful practice.

The treatment of the numerous ailments comprehended under the term of Chronic Rheumatism, is accompanied with far greater difficulty ; still, much of this may be got rid of by attention to the remarks which we have already made as to the various morbid states which complicate, or even entirely replace, the original disease. The reason that so many cases of what is called Chronic Rheumatism are so intractable is, that there are several maladies co-existing at one and the same time ; but we need not now recur to this subject. Suffice it to say, that whenever we have reason to suspect, in chronic rheumatism, that the blood is still buffy, the detraction of a moderate quantity will unquestionably facilitate the cure. In protracted cases, it is useful to make an *explorative* bleeding to a small amount, for the purpose of ascertaining if this condition of the blood be present ; for if it is, the most successful internal treatment will be found to consist in the use of mercury—the oxymuriate or bichloride may often be used with admirable effects—or of iodine, or of guaiacum. If, on the other hand, the blood be not at all buffy, the probability is, that the so-called rheumatic pains either are connected with a gouty state of the system, or are chiefly of a neuralgic character.

In the first case, a course of alkaline remedies and of colchicum, coupled with an occasional purgative and abstinence from all fermented and vinous liquors should constitute the basis of the treatment ; and, in the latter case, the use of sedatives and tonics, more especially of bark, arsenic and such like remedies, not omitting the exhibition of alterative operients,* promises by far the best chances of relief. To subdue local pains, blisters and sinapisms are usually much more effectual than the embrocations which are commonly used.

* The addition of small doses of Croton oil to aperients seems often to exert a very useful effect in protracted cases of neuralgic suffering. The exhibition of occasional emetics also is not unfrequently an excellent adjuvant ; a full dose of an anodyne given after the operation of free vomiting will often soothe the most excruciating pain, when the anodyne alone would have failed.

A PRACTICAL TREATISE ON THE DISEASES PECULIAR TO WOMEN.

By Samuel Ashwell, M.D. Part I. FUNCTIONAL DISEASES. London, 1840. Pp. 200. Octavo. Highley.

THIS is an excellent practical work, the result of Dr. Ashwell's extensive experience as obstetric physician at Guy's. A faithful analysis of its contents will enable our readers to judge of their value.

CHAP. I.—CHLOROSIS.

Symptoms.—Dr. Ashwell distinguishes three forms of this disease, viz. a mild and incipient, and inveterate and confirmed, and a complicated form. The *mild* form, often preceded from even early infancy by a greater or less state of debility, only manifests its peculiar nature at the period of puberty, when the non-establishment of the various changes incidental to that epoch excites maternal solitude, ever awake to all irregularities of the menstrual functions. We need not detail the symptoms which manifest themselves; the pasty complexion, listless movements, capricious appetite, and numberless ailments of the chlorotic girl, are known even to the tyro. When the disease becomes *inveterate* and *confirmed* the sufferings are indeed great, the depression of spirits is distressing, the most extraordinary substances are consumed in place of natural articles of diet; the complexion assumes a dirty green cast, while the lips, tongue, and fauces are bloodless; the digestive organs are materially disordered, whence vomiting, constipation, and sometimes diarrhoea. The head is the seat of innumerable pains and anomalous sensations; the cellular texture of the body becomes more or less infiltrated, and the general surface is cold and pallid; it is sometimes very dry, the hair losing its brightness, and the finger-nails becoming brittle and split. Many symptoms, at this period of the disease, may easily be mistaken for indications of structural disease of some of the great organs of the body.

CAUSES OF CHLOROSIS.

“*Predisposing.*—A delicate, feeble, and undeveloped constitution, where the circulation and nervous power are inadequately excited to perfect the organization of the body, in consequence of which the evolution of the ovaries is delayed, and their peculiar influence on the system, and particularly on the uterus, is withheld; thus, puberty is only imperfectly or perhaps not at all established, and menstruation, which must be preceded by puberty, is absent. At a later period of life, when even married women and widows are the subjects of chlorosis, its predisposing cause is most frequently derangement of menstruation; there is either retention, irregularity, or pain and difficulty in the performance of the function. Nor must it be forgotten, that profuse menstruation, menorrhagia, and chronic leucorrhœa, may induce chlorosis.” P. 7.

Unhealthy localities, the unnatural habits of the rich, the privations of the poor, and indeed all causes exerting an enfeebling effect upon the system especially in early life, may predispose to the disease. Dr. Ashwell has seen one or two well-marked cases in men.

Exciting.—Circumstances exerting a depressing effect upon the mind, as disappointed affections, &c. &c. Diseases and habits which produce a debilitating effect upon the system in general and the sexual in particular, as amenorrhœa, menorrhagia, excessive venery, masturbation, &c.

PATHOLOGY OF CHLOROSIS.

"It may probably be fairly assumed, certainly it is the most prevalent opinion, that chlorosis primarily depends upon a morbid condition of the blood, which secondarily affects the ovaries and uterus, by retarding their growth. This opinion is supported by the fact, that in the blood of chlorotic patients there is an increased proportion of the serum, with a marked diminution of crassamentum. This has always been my view of the disease; nor would it be difficult to trace to this morbid condition of the blood many, nearly all, the different theories that have been propounded." 8.

DIAGNOSIS.

Some of the symptoms of chlorosis, as cephalgia, dyspnœa, palpitation, &c. are too often treated by the ignorant or superficial observer as of inflammatory origin. "From the want of this caution, I have witnessed the very injurious consequences of such mistakes, the practitioner having forgotten, what in female diseases it is peculiarly important to remember, that the severity of the pain, and the rapidity of the pulse, are generally indications of irritability and excitement, not of inflammation; demanding narcotics, carminatives, and at the most, counter-irritation, not bleeding, active purging, and spare diet."

COMPLICATIONS OF CHLOROSIS.

Complication with Amenorrhœa.—It is an error frequently committed to suppose chlorosis and amenorrhœa to be convertible terms. There cannot be chlorosis without more or less amenorrhœa, yet amenorrhœa often exists without any degree of chlorosis. The complication of the two may arise, either, as it generally does, from the persistence of chlorosis preventing or arresting menstruation, or occasionally from the occurrence of amenorrhœa after healthy menstruation has been established. These complicated cases are those which, if promptly and effectually treated, (usually by tonics) so often terminate in health. In some instances, however, the treatment is difficult and protracted, and great alarm is felt lest more serious complications should have occurred: indeed, advice is not sought in these cases, sometimes, until some vital organ has become involved. "I have often, during the last few years, been requested to treat such patients, of whom, had I judged from what I heard, I should not have predicted any danger; and yet, on careful inquiry—and in some instances at first sight—I have been convinced that the case was all but hopeless." Although these protracted cases, under a concurrence of favorable circumstances, sometimes do well, yet ordinarily some vital organ becomes the seat of fatal disease, if proper remedies be not resorted to.

Complication with Hæmatemesis.—This is by no means uncommon in

cases of chlorosis with amenorrhœa. The treatment may have been to a certain degree successful, the quality of the blood may have become improved, and during the continuance of the amenorrhœa, engorgement of the digestive organs occurring, a vomiting of blood is the result, and it often continues to recur at intervals not very unlike the catamenial periods. Sometimes alarming anæmia results. These are the cases in which local emmenagogues are so useful. The quality of blood has now become sufficiently good, and endeavors must be made to divert it into its natural channels.

Complication with Derangement of the Digestive Organs.—These organs are always more or less affected, but sometimes very prominently so. Dr. Ashwell truly observes, that the real matter of astonishment is, that the powers of life are so long maintained, when we consider the nature and insufficient quantity of food taken by the chlorotic patient. Indeed, the vital powers are often reduced to the lowest ebb, and the recovery of the patient pronounced impossible; yet the author's experience has taught him that, where no predisposition to phthisis exists, there is no complication of the disease, "which affords such ample scope and reward to judicious, persevering, and observant treatment. It is rare for a structural change to occur in the stomach, liver, or intestines, in the most protracted form of the disease, although it is common to see the largest amount of functional derangement." Not only are the usual symptoms of dyspepsia present, but hypochondriasis in its worst forms, sometimes verging upon temporary insanity, frequently adds to the already abundant suffering.

Complication with Functional Cerebral Affection.—This is sometimes very distressing. The pain may be general and moderate, or local, excruciating and unbearable. In some cases it is of an intermittent and neuralgic character, while in others it is so constant and overwhelming as to lead to the belief of its resulting from organic disease. Various convulsive affections, seemingly originating in the severity of the pain, frequently occur. Vertigo morbid acuteness of the senses, various sympathetic affections of the digestive organs, are also often present. It is consoling to know that the result of experience proves that these symptoms rarely have an organic origin. In this complication, thus contrasting it with some others, the sleep often continues good, the appetite remains in some degree, and emaciation is not very rapid.

Complication with Affections of the Vascular System.—The symptoms resulting from these are of less frequent occurrence, but very formidable in appearance, and excite the greatest anxiety in the minds of the friends of the patient. They are total loss of colour, œdema, palpitation, syncope, &c. Dr. Ashwell has found ascites rarely present, except in cases occurring at the more advanced periods of life, when it arises usually from some structural disease in the abdomen. Care must be taken not to attribute the icterode cast of countenance to liver disease, requiring the employment of mercury.

Complication with Phthisis.—This is usually the cause of death, when

chlorosis terminates fatally. It is a question worthy of notice, whether chlorosis and amenorrhœa induce phthisis, or whether these affections themselves do not rather arise from the originally phthisical tendency of the system delaying the approach of puberty, amid its other injurious influences. Although it is probable that chlorosis may in some cases produce phthisis, yet, in the majority of cases, it only develops the latent tendency to the disease. This opinion is confirmed by the fact, that however far the other complications of chlorosis may have extended, and however, low they may have reduced the patient, they rarely pass into phthisis. In the present complication there may be an absence of the severe suffering found in some others, but the quick pulse, hurried respiration, rapid emaciation, and troublesome cough, too often replace these. Dr. Ashwell thinks the attention of the profession should be more directed than it has been to the too frequent occurrence of phthisis in this disease, especially as the fears of the patient and her friends are often lulled by the self-delusive nature of the disease. The prognosis is very dubious. Our hope of success consists in improving the condition of the blood, and our sign of having accomplished this is found in the increase of flesh and in the diminished rapidity of the pulse, for, so long as this "beats 130, 120, or even 110 in the minute, it must not be supposed that any real amelioration has taken place." We must not be satisfied with the absence of auscultatory signs, but bear in mind, that the general condition of the patient is favorable to the deposition of tubercle. If we wait to adopt precautionary treatment until the stethoscope indicates the actual existence of the disease, it will be too late.

These various complications, which we have now considered, when they have long existed, render the case very confused, and difficult for accurate diagnosis. An obstinate leucorrhœa, moreover, is a frequent attendant, impairing the restorative powers, and materially retarding the cure. Simple chlorosis is usually a disease of early life; joined with amenorrhœa, it may be met with at any time between puberty and the cessation of the menses. The complication with phthisis is found chiefly between the period of puberty and the age of thirty.

TREATMENT OF CHLOROSIS.

The treatment of simple chlorosis should be the type for the treatment of the other forms; but, a most grave error is too often committed, by considering it a local, not a constitutional disease; and ignorant practitioners, from the untimely use of drastics and emmenagogues, have yet further reduced the already enfeebled powers, and facilitated the advent of pulmonary disease. The author deploras, in common with every medical man of proper feeling, the prevalent faulty notions on the subject of physical female education, leading as they do to the production of so many serious and fatal diseases; he believes that, were there an end, chlorosis would become a rare disease. Alas! many, many yet must be the victims sacrificed at the shrines of fashion and folly, ere mothers learn prudence, or fathers compel the observance of the dictates of common sense.

Our first attention must be directed to the improvement of the state of the digestive organs, for, how shall we amend the deteriorated condition of the blood, until the organs of nutrition are in a fitting state for its elimi-

nation. But here a prudent hand must guide the means: our object is not to excite excessive purging, as a direct mode of cure, but to secure the due relief of the bowels by aloes and rhubarb, sulphate of soda and manna, and, where alteratives are required, the hyd. c. creta. Mild cordials should be combined with the aperients. Warm clothing, regular exercise, and, when the state of the appetite will permit, meat diet and mild malt drink, are to be recommended. If we succeed in improving the state of the digestive organs, the general vigour is in some degree restored, and the complexion partially cleared, but the catamenia are seldom by this alone induced. Now is the appropriate period for the administration of iron, especially the sulphate while, had this remedy been employed prior to the due regulation of the secretions of the alimentary canal, the symptoms would have become aggravated, and not relieved. Its effect, when given judiciously, is sometimes magical. In some cases the subcarbonate is better borne, and occasionally other tonics, as quinine, sarsaparilla, zinc, &c. effect the purpose.

As to *Emmenagogues*, they are best employed when the pallor has become diminished, the bowels more regular, and the blood both more abundant and of richer quality. Iron (and especially the iodide, when the strumous diathesis is associated with chlorosis) is often alone a sufficient emmenagogue. The use of the mustard hip-bath, and of the local salt shower-bath across the loins, are excellent adjuvants. The injection of the vagina with the strong ammonia (liq ammon. 5j. lactis ℞j.) has proved useful in the hospital. Dr. A. has great doubts of the utility of applying leeches and cataplasms to the mammae; he has often seen electricity useful. Travelling, with the change of scene and of habits it necessitates, as also a visit to chalybeate waters, and a sea voyage, have often cured chlorosis. The treatment requires to be early adopted, and most perseveringly continued, perhaps for months. As the cure progresses the diet should be improved, and the patient permitted to take mild ale or porter, or, if these are disagreeable, a little negus with her meals.

Treatment of the Complications.—The *hæmatemesis*, which frequently occurs in these cases, is sometimes accompanied with so much pain and congestion in several organs, as to lead to the adoption of active means, such as bleeding, purging, lead, &c., but always, according to Dr. Ashwell's experience, with bad effect. Bleeding is seldom required, and active or long-continued purging is always injurious. The general symptoms of chlorosis will enable us to distinguish the local affection from one of an inflammatory origin, and lead us to adopt means for increasing the natural menstrual secretion, such as electricity, the mustard-bath, leeches to the vulva, moderate cupping of the loins, together with the use of emmenagogues and an occasional purge. In the *cerebral* affections local cupping, blisters to the nape of the neck, moderate and cordial aperients, change of air, cheerful occupation and society, with active out-of-doors pursuits, give most relief. In threatened *phthisis* an early and entire change of air may sometimes avert the impending mischief.

II. AMENORRHŒA.

This Dr. Ashwells divides into Amenorrhœa of Retention when at the

proper age menstruation is absent, and Amenorrhœa of Suppression, in which the menses, having been once in existence, become suppressed.

(A.) AMENORRHŒA OF RETENTION.

1. *From Deficiency, Malformation, or Structural Disease of the Organs of Generation.*—These cases are happily rare, and of course often incurable, as for example, when the ovaries are absent or structurally diseased: menstruation may however occur when but a portion of an ovary remains. The absence of the ovaries confers a masculine appearance upon the female, and she is often submitted to most serious disorders of her health. In cases of absence of the uterus the general health has sometimes not seemed to suffer, which however is not the case when the menstrual fluid, although secreted, is prevented escaping by some malformation; and, if not liberated by a surgical operation, the accumulation may give rise to serious or even fatal symptoms.

Treatment.—This of course, where the organs are absent, is out of the question; but where obstruction or malformation exists, judicious surgical interference will do much, although the risk of inducing peritoneal inflammation should be always borne in mind.

2. *From a slow and partial Development, or an entire absence of Puberty.*—The period for the establishment of puberty varying in different individuals, the mere absence of menstruation at the usual epoch must not be regarded as disease; delicacy of constitution or idiosyncrasy may retard its development. Rare cases will sometimes occur, even independently of congenital malformations, in which puberty and menstruation are never established. If the amenorrhœa be very prolonged, the state of system characteristic of chlorosis will manifest itself. These cases usually terminate favourably, if violent means be abstained from, but months or even years may have to be spent in their treatment, which is of a similar description to that required for chlorosis.

3. *Amenorrhœa after Puberty.*—(a.) *As occurring in the Plethoric and Robust.*—This form of amenorrhœa, characterised by a state of congestion, or of active plethora, is usually found in the inhabitants of rural districts; it is generally curable, though often neglected. Fulness, and pain of the head, and pain in the lumbar region, with a full pulse, accompany this form, especially at the periods when menstruation should occur. Some women have naturally long intervals between their periods, plethora and dysmenorrhœa being at such times present. If the amenorrhœa be neglected or badly treated, it may become a most obstinate disease. It usually originates in a congested state of the uterus impeding its secretory powers. The symptoms of plethora may become subdued, and yet the case pass into one of ordinary chlorosis, the establishment of the catamenia being indefinitely delayed.

Treatment.—General bleeding is not required unless some important organ becomes congested. Cupping the loins or sacrum, and the application of leeches to the labia, thighs, or uterus, together with active purgatives, usually relieve sufficiently. The effectual use of the mustard hip or foot bath

(maintained at the temperature of 96° or 98° for an hour at a time), every or every other night, is very desirable, and active walking exercise should be insisted upon, but riding tends to encrease the uterine congestion. Dr. Ashwell has found small revulsive venesections (5 or 6 ozs.), about the period of the menstrual effort, very useful, but he cannot say the same for the practice of leeching the mammæ. Even when the plethoric state has become subdued, we should not be in too great haste to resort to emmenagogues, as some months may be required before the uterus will properly resume its functions. Where, however, true debility ensues, and chlorosis is threatened, they should be employed.

(b.) *As occurring in the Delicate, Hysterical, and Irritable Female.*—These cases are more common than those already noticed, the induction of menstruation being in them difficult and tedious, and in spite of emmenagogues, they will often degenerate into cases of chlorosis complicated with amenorrhœa.

(B.) AMENORRHŒA OF SUPPRESSION.

1. *Recent and Acute Suppression.*—This is especially brought about by mental emotion and cold. The symptoms vary according to the constitution of the subject. In the plethoric and healthy we may have congestion, or even inflammation of the uterus; in the delicate and nervous, spasmodic and neuralgic symptoms. Hysteria approaching to epilepsy, and partial paralysis, are sometimes present.

Treatment.—When inflammation exists (and it has been known even to pass into a state of gangrene), prompt and active bleeding are called for, the mere suppression being quite a secondary matter. In the delicate (in whom suppression is more apt to occur), the pain and other symptoms are rarely of an inflammatory origin, although the satisfactory determination of this point is sometimes very difficult. In these cases the pain is very fugacious and changes from place to place, often accompanied by hysteria and syncope. Here, even local bleeding is seldom useful, producing a metastasis, but not a removal of the pain. Active purging to relieve the bowels, usually overloaded, is desirable, while local baths and antispasmodics should also be had recourse to. Anodyne and antispasmodic clysters are sometimes almost magical in their effects; they should be small in bulk, and retained in the rectum for a considerable period, by pressing its orifice with a napkin. Sometimes, as the result of this treatment, the menses at once appear; but, on the other hand, when month after month passes without this being the case, a state of chronic suppression becomes established. After a first attack of suppression, every effort should be used, just prior to the next period, to induce the natural secretion. The warmth of the body should be carefully provided for, the bowels kept free, mental and physical excesses avoided, and the mustard baths used on alternate nights.

2. *Chronic Suppression.*—This may either result from the acute form, or come on gradually owing to constitutional delicacy or ill-health. It may also arise from organic disease of the organs of generation, or from a premature cessation of the menses. In considering these cases we must recollect that some women, although healthy, menstruate so slightly, that chronic sup-

pression would seem otherwise to be at hand. Among the symptoms may be mentioned vertigo, obstinate headache, variations of temperature of the surface, loaded bowels, dyspnœa, palpitation, &c. If the disease continue unrelieved, the health may become broken up, and phthisis or organic abdominal disease ensue.

Treatment. Many slight cases from cold, &c. will disappear without aid, and, where no effect is produced on the health, the case may be left to Nature. When abundant leucorrhœa is present, it should, owing to its debilitating effects, be checked as soon as possible. The cases occurring in nervous subjects are usually very protracted; and those yield much more easily, where some remains of congestion still exist, provided this be effectually relieved, before resorting to stimuli: when this is doubtful a careful examination of the uterus should be made. When debility exists, unaccompanied by plethora, stimuli and tonics are required.

III. EMMENAGOGUES.

The author does not believe that there are any medicines which exert a specific effect upon the menstrual secretion, but that there are several, which, by reason of their stimulating the uterus, become important auxiliaries. These means are contra-indicated in amenorrhœa and chlorosis, arising from malformation or absence of the generative organs, as also in cases of mere absence or slow development of puberty, or when the amenorrhœa is connected with phthisis or plethora. They are found useful in inactivity of the uterus, occurring after the establishment of puberty, where neither plethora, or marked delicacy of constitution is present, as also in hysterical irritable women, in whose cases cordials and tonics have been tried in vain. In chronic suppression they are especially indicated. Their exhibition should be preceded by local depletion, regulated diet, and purgatives.

1. *Local Emmenagogues.*—The only powerful emmenagogue by which the uterus can be directly stimulated is *electricity*. Although employed with some success of late at Guy's, it is an uncertain remedy and should be very cautiously used. *Leeching the os uteri*.—If some leeches be applied by means of a glass, a few days prior to the period, and repeated several times, by removing the congestion, they will frequently reproduce the secretion. *Stimulant injections of the vagina.*—Dr. Ashwell speaks highly in favour of the ammoniacal injection. It should be commenced three days prior to the expected period, and should be retained in the vagina for ten or fifteen minutes, by closing the vulva with a napkin. It should produce a sense of heat, tingling, or even of pain, and should not be employed when congestion is present. He reprobates, as risking the excitement of peritonitis, the injection of the uterine cavity itself. *Mustard hip bath* is often very useful, but the patient should remain in it an hour each time. The exhibition of *mustard* by the mouth (gr. 8—12 ter quaterve ex M. camph), just prior to the menstrual period, is often attended with excellent effect. *Sexual intercourse* is sometimes a good emmenagogue, though of course, of but limited application. *Stimulating clysters* are much recommended by some authors, and Dr. Ashwell has used that of Dr. Schonlein (Aloes gr. x. mucil. ʒj. bis terve die).

with good effect. Leeching the vulva or pubes, stimulating the thighs, hypogastric or lumbar regions with embrocations, flesh-brushes, &c. &c. are all useful adjuncts.

2. *Constitutional Emmenagogues.*—The author thus expresses his opinion on *Mercury*.

"It is not to be used in slight cases, nor where there is extreme exhaustion, a predominant irritability, or a tendency to phthisical or strumous disease. But, in obstinate amenorrhœa, where other treatment has failed, where there is chronic inflammation or permanent congestion, and any evidence of incipient structural change, there is no remedy comparable to this. As an alterative I have not used it successfully; but if salivation be produced and maintained, mercury often ensures decided and permanent benefit. If the pulse becomes more rapid and less strong; if constitutional irritation and weakness daily increase; if there be cough or diarrhœa, these not having previously existed, the mercury should at once be discontinued. More frequently, in cases warranting its use, improved symptoms will follow moderate salivation. The mercurial effect should be carried so far as to produce soreness of the gums and moderate salivation; and these should be kept up for twelve or sixteen weeks." 77.

Iron.—This excellent medicine is the more valuable, as, since it acts by improving the impoverished state of the blood, its effects are more likely to be permanent. Plethora and constipation must be removed before employing it, and it should be discontinued on the appearance of "giddiness, headache, sickness, and a quick or full pulse."

Secale Cornutum.—Dr. A. reports unfavourably of the emmenagogue powers of this medicine. It should be employed cautiously, as its long-continued use will be followed by irritation and spasm of the abdomen. It is most successful in relaxed and debilitated habits, and when determinate efforts are making by the uterus to establish its secretion. *Iodine*, by improving the condition of the blood in scrofulous subjects, is sometimes a very good medicine, but Dr. Ashwell has met with repeated failures. *Strychnine* he has used without success. *Nitre* occasionally exerts a beneficial effect, through the medium of the kidneys. *Aloes* should not be given in a congested state of the alimentary canal or uterus, but, when this is not present, it often determines the inactive uterus to secretion.

IV. VICARIOUS MENSTRUATION.

This, when it neither deranges or exhausts the powers of the system, can hardly be called a disease: it usually occurs in the unmarried, (when married women suffer from it, they rarely conceive during its existence,) and as often in the weak as in the robust. The discharge, usually sanguineous, is occasionally leucorrhœal. "Some portion of the pulmonary and intestinal mucous tissues are thought to be the more common seats of the vicarious loss; but certain it is, that the nipples, the ears, the gums, the umbilicus, the axillæ, the bladder, any part of the skin, or mucous membranes, or the surface of an open ulcer, may occasionally by gush, more usually by slow

transudation for several days, furnish the vicarious blood. In the regularity of its return, it seldom resembles the healthy function, although cases are recorded where the menstrual epoch has been exactly observed." The discharge is frequently preceded by local pain. It never terminates fatally; the uterus resuming its functions eventually, and the vicarious organ sustaining no injury.

Treatment.—If it occur often, and premonitory symptoms are present, emmenagogues, in the absence of plethora, may be used; while, if congestion of the uterus exists, the ordinary means for subduing it must be put in force. "A smart drastic purgative may not only prevent the vicarious attack, but also induce menstruation; and I have several times, after depletion, witnessed the good effects of electricity and the strong mustard bath, at a high temperature." If the hæmorrhage be great, it must be treated on general principles.

Vicarious Leucorrhœa.—In these cases "strictly speaking, there is amenorrhœa, because a mucous, instead of a sanguineous secretion, is furnished by the minute extremities of the uterine arteries. But there is activity instead of torpor; and it will be found, on inquiry, that all the symptoms denoting menstruation regularly appear, especially when this condition is vicarious of the catamenia at an early age." It is most common in delicate females, and in women exhausted from various causes. Dr. A. has known conception occur during this colourless menstruation. In early life, when it occurs only at intervals, the health is usually not much deranged, and, under favourable circumstances, natural menstruation eventually displaces it. The treatment is that required for vicarious menstruation, good air, tonics, and nutritious diet being often necessary to assist in establishing the natural functions.

V. DYSMENORRHŒA.

"Dysmenorrhœa is an important disease. It is very common, and produces extreme suffering—it often prevents conception, and, if pregnancy has occurred during its continuance, the woman is exposed to the risk of abortion. Although, in itself, it is not a fatal malady, yet it admits of proof, that malignant diseases have followed its protracted existence, and, lastly, it is exceedingly difficult to cure." 100.

Single women are most liable to it, and especially those of delicate, strumous, or phthisical constitutions. It is rare among those of a sanguine temperament. The mere painful state which precedes the menstrual secretion, though often excessive, does not constitute a case of dysmenorrhœa. The disease manifests itself under various forms.

1. *Irritable or Neuralgic Dysmenorrhœa*—This occurs independently of inflammation or congestion. After an irregular condition of the menses occurring for some time, dreadful pain accompanies the emission, while the discharge itself is scanty and clotted. The degree and duration of suffering vary much in different cases, depending much upon the local organization of the parts, and the general susceptibility of the patient: it sometimes is horrible and protracted for days. The mammae usually sympathize, but the

constitutional disturbance is not great, and the strength, after the attack has subsided, remains little impaired. If, however, the case be neglected, and the disease established, the general health gives way, and complete anæmia and chlorosis may result. In the *plethoric* form the expulsive efforts made to discharge the clots are very violent; exactly resembling the throes of labour. The *congestive* form is often induced by emmenagogues improperly used, determining blood to the uterus. Here, too, intense sufferings are produced by the expulsion of small coagula, which are often mistaken for ova. Mackintosh, Capuron, and others, attribute the symptoms of dysmenorrhœa to *mechanical obstruction*, from a strictured state of the cervix, or a partial obliteration of the os uteri. Dr. Ashwell, without going so far as this, still believes, that in many cases such contraction exists, but alludes to some in which its dilatation was not followed by relief.

Diagnosis.—This is of importance in cases of suspected abortion. "The duration of the complaint, the nature of the menstrual secretion in former periods, the enlarged state of the uterus from congestion, as ascertained from examination by the vagina and rectum, independently of the physical characters of the product, are quite sufficient to satisfy any observer." The author quotes Dr. Montgomery's admirable observations on the distinction between true and spurious ova.

Pathology.—Much difference of opinion prevails upon this point; some consider the disease as always of a nervous, and others as of an inflammatory nature. The author believes that either of these states may prevail in different cases, for, while in some there is more irritation, producing excessive suffering, in others, a low degree of inflammatory action exists, producing the false membrane, which is extruded with such difficulty; and which, if it continue long enough, may cause a degree of thickening of the os and cervix uteri sufficient to create a mechanical obstacle, and in other cases may even lay the foundation for organic disease.

Prognosis.—This disease is never directly fatal; and, if it be considered a mere neuralgia, however great the suffering, a favourable prognosis may be given. In patients predisposed to scirrhus disease, our opinion should be guarded. In the great majority of cases the affection is cured by medical treatment, child-bearing, or by the natural cessation of the menses.

"*Treatment.*—There are, in the treatment of every variety, two principal indications; to alleviate the urgent pain of the menstrual period, and to employ, during the intervals of the discharge, such remedies as shall restore to the uterus its healthy secretory power. Both are occasionally accomplished with difficulty; the first, however, is generally the most easy of fulfilment." 109.

In the usual or *neuralgic* form, the patient should employ the mustard hip-bath on the accession of the premonitory pains, repeating it three or four times in the twenty-four hours, and remaining in it half or three quarters of an hour, or even, if the pain is very violent, until faintness comes on, while nauseating diaphoretics should at the same time be given.

In mild cases the hip-bath and slight narcotics suffice. When the pain is very severe morphia and opium suppositories are required. When, from the forcing efforts made, there is reason to believe that a coagulum or

false membrane is in process of expulsion, repeated doses of the *ergot* may facilitate it, and obtain at least an interval of ease. General bleeding is sometimes, local always, required: this latter is perhaps best performed by leeching the os uteri, or rather by scarifying that part, as recommended by Mr. Feuner.* Fomentations and anodyne injections of the vagina must not be neglected.

During the *intervals*, all the means calculated to restore the general health, as mild aperients and alteratives, chalybeates, fresh air, exercise, &c. must be resorted to. Dr. Ashwell has been disappointed in trying the volatile tincture of guaiacum, as recommended by Dewees. In the *congestive* and *plethoric* forms, occasional depletion is required, while the use of tonics requires great care. The author considers marriage as often remedial, although very bad cases do sometimes occur in married life. When *structural change* is dreaded, *mercury*, perseveringly employed, is indicated: it should be had recourse to when the disease is very obstinate, and the membrane habitually expelled; but, especially, when there is a thickened or indurated cervix. When the cervix is enlarged and hardened, the iodine ointment may be advantageously used.

VI. MENORRHAGIA.

Under this head, Dr. Ashwell considers both cases of profuse menstruation, and cases of uterine hæmorrhage independent of pregnancy.

1. *Profuse Menstruation without Uterine Bleeding*.—Females somewhat advanced in life, and of a delicate habit of body, are more liable to this form than the young and robust. Climate and idiosyncrasy cause varieties in the quantities lost at the menstrual period, and our judgment must be formed principally from the effects upon the system. Menstruation may be excessive from the large quantity lost in a short time, or (more commonly) from a small discharge being continued over a very long period; or, again, from the return of the periods being too quick, "young and single women are more prone to the latter; while married females, weakened by child-birth, undue lactation and leucorrhœa, are obnoxious to the former variety." Leucorrhœa is usually present prior to or during the intervals. The symptoms are those which usually attend hæmorrhage. On examination per vaginam a flabby state of the various organs is found; the os uteri is somewhat patulous, but there is neither tenderness or induration. These patients are very prone to abortion and to prolapsus uteri. In a few cases plethora, but in most cases a delicacy of system, (which may be produced *inter alia*, by repeated labors and abortions, undue lactation, excessive venery,) predispose to the disease. It is distinguished from the other forms of menorrhagia by the absence of coagula.

Treatment.—In the plethoric and robust the discharge is often salutary; and may be permitted to subside naturally. Moderate depletion (usually local) may be instituted prior to the menstrual period. In delicate and feeble women, stimuli and anodynes may be required; and, when the dis-

*See Medico-Chirurgical Review, No. 64, p. 620, April, 1840.

charge is very great, the ergot is especially useful in checking it. The local application of, and injection into the vagina of cold water, and even the plug, (though rarely when the case has been well treated,) may be required. In the *interval*, means directed to the improvement of the general health, together with salt-water baths, vaginal injections, and cold sponging the loins and hypogastrium, must be put into requisition.

2. *Profuse Menstruation with Discharge of Blood.* (a.) *Acute or Active Menorrhagia.*—This is not very common, occurs chiefly in the robust, and is preceded by plethoric symptoms, which are indeed often relieved by the discharge. The frequent recurrence of the discharge eventually deranges the health seriously. The treatment is like that already named, and smart drastic purges are often of great utility. When spasmodic rather than inflammatory action is present, nauseating doses of ipecacuanha, and clysters of assafœtida and opium are the remedies. Great care is demanded in the management of the *interval*, and caution is especially required respecting tonics and stimuli, which, if injudiciously employed, only serve to keep up the discharge: thus Dr. Ashwell has known cases which obstinately resisted the ergot and tonics, cured by recurrence to antiphlogistics.

(b.) *Passive or Chronic Menorrhagia.*—This, occurring in the delicate, hysterical or exhausted female, is the most common form of the disease, and often arises from the neglect of early profuse menstruation, and from the injurious employment of stimuli. Every degree from the most trivial to the most dangerous prostration may occur, and, although the disease is in itself rarely fatal, yet it may give rise to dropsical effusions and other serious mischief.

Treatment.—The most absolute rest is requisite, and in aggravated cases the same treatment which is required for puerperal hæmorrhages is required. Dr. Ashwell thus expresses himself on the subject of *astringent injections*.

"Astringent injections should rarely be used during the first few days of the menstrual period, as they often produce uterine spasm: but when coagula are passed, either alone or mixed with the catamenial fluid, the secretory function is either partially or entirely suspended, and injections may then be highly beneficial. It is essential that the patient lie down, when the injection is thrown into the vagina, that the pelvis be raised by placing a sofa cushion under the hips, so that the fluid may easily reach the upper extremity of the canal, and that whatever quantity be injected, it shall be retained for ten or fifteen minutes in direct apposition with the parts. To effect this, the nurse should make firm pressure on the vaginal orifice by a napkin accurately applied. Where these conditions are complied with, and where occasionally, in susceptible and irritable women, the injections are slightly warmed, so as to prevent the probability of the occurrence of uterine spasm and pain, I know practically that great good will generally result from their administration." 139.

Dr. A. employs the nitrate of silver, decoction of ergot, oak bark, acetate of lead, sulphate of iron, &c. &c. as materials of injections, and prefers the india-rubber bottles with ivory tubes to syringes. The following is our author's opinion of the *plug* in aggravated cases.

"During the flow, if alarming loss of blood seems to be approaching, the ergot and opium, injection of cold water and astringent lotions into the rectum,

and, above all, plugging the vagina as far as the os, must be practised. Soft *dry tow*, slowly introduced in small quantities, till the passage is entirely filled forms the best tampon or plug, and it may be allowed to remain unchanged for twenty-four or thirty hours. The patient will probably object to such a remedy and suffer slightly from its use; but neither of these circumstances are sufficient to justify the practitioner in giving it up. A silk handkerchief, lint, or linen, may be used, but they must be dry; if wet or saturated with moisture, their introduction is painful and difficult; dry, soft tow, in small pieces, is certainly far better. I am convinced that, in excessive menorrhagia, plugging is not sufficiently often resorted to." 140.

(c.) *Congestive Menorrhagia*.—This form usually occurs at the middle or more advanced periods of life. It possesses characters different from the other forms, and Dr. Ashwell is surprised that so little attention has been paid to it. It is very tedious, sometimes lasting for years, copious leucorrhœa often accompanying it. The author has not met with it prior to the ages of thirty-eight or forty, but he has met with modified attacks after menstruation might have seemed to have ceased. The effects vary according to the degree and continuance of the discharge, which sometimes continues for months without intermission, or degenerates into leucorrhœa. Prior to the repetition of a fresh irruption, there is often great bearing-down in the region of the uterus, and Dr. Churchill has observed great dysury frequently. The disease sometimes undergoes a natural cure by the occurrence of pregnancy, and more frequently from the cessation of the menses. There is often great difficulty in deciding whether organic disease is present, and this can only be ascertained by a careful examination per vaginam. Even when such disease does not exist we shall find "an increased uterine bulk, fulness of the cervix and openness of the os uteri."

Treatment.—Where plethora is present, either general or local bleeding, and, if there be fulness or pain about the cervix uteri, scarification of that part must be employed. Sexual intercourse and all kinds of stimuli must be avoided for some days prior to the menstrual periods. The various debilitating effects resulting from the excess of discharge, must be treated upon general principles. Astringent injections of the vagina are useful, especially when abundant leucorrhœa is present. Although ergot has often failed, and sometimes even produced ill effects, yet Dr. Ashwell speaks favorable of it. Lead and opium, turpentine, iron and opium, have in other cases been useful.

Dr. Ashwell considers menorrhagia may frequently be attributed to the avoidance of sexual intercourse, and the consequent congestion of the uterus and ovaries. "This abstinence is dangerously practised to avoid the risk of adding to the number of a family, already thought to be too numerous for the pecuniary means of its principal supporter." Loaded bowels and luxurious living are causes of menorrhagia, and purgatives used twenty-four hours prior to the expected attack are often very useful.

VII. LEUCORRHŒA.

Of all the sexual diseases this is the most common; few mothers escape its attacks. The young and robust female is less liable to it than the deli-

cate and older one. In its mild form it is so trifling a disease, that it is very often neglected by the patient.

"And yet I believe, if care were taken at this early stage, if abluion only was frequently practised, the tone of all the parts, and more particularly of the secretory membrane, would be regained, and further mischief entirely prevented: so far as my observation has gone, there is amongst female youth, and women generally, in this country, an unfounded dread of abluion of the external organs, either cold or tepid. The vicissitudes of our climate in some measure account for and justify the impression, but nevertheless it is too general, and extensively injurious." 159.

It may last for months or years, or sometimes during life; the ordinary secretion from the genital organs, is a glairy, lubricating, white-of-egg like fluid, but the leucorrhœal fluid varies according to the part whence it proceeds; thus, that from the vagina is more abundant and less viscid than the uterine, while, that proceeding from the interior of the cervix uteri, is more tenacious than either. It assumes every variety of appearance however, from that of the simple increase of the natural mucus, to a state of mucopurulency, purulent ichorous, sanguineous, and varying-coloured discharge, especially in cases where inflammatory action or organic disease exists. An examination per vaginam, when inflammation is present, will discover a slight increase in the size of the uterus and a tenderness of its cervix; at other times, this last is found soft and patulous; the speculum shows it to be sometimes red and at others pale.

Dr. Ashwell does not attempt to classify cases of leucorrhœa into uterine and vaginal: the diagnosis of the part of the mucous membrane affected is often difficult, and very frequently both portions are implicated. The vagina is however usually the seat of the disease, and leucorrhœa so originating is usually the least severe and most easily curable; when there is great constitutional disturbance, and the leucorrhœa is very obstinate, the uterus is usually the seat of the affection. The author describes four forms of the disease.

1. *Acute and Mild Leucorrhœa.*—Cases of mild leucorrhœa, arising from excitement and congestion of the vessels of the secreting parts, are the most frequent, the locality of the discharge in such cases being usually situated in the glands at the entrance of the vagina. In some of these cases there is much local and constitutional irritation, especially if they be badly treated at the beginning, and, even under the best treatment, the case occasionally proves very obstinate and passes into the chronic form. Generally, however, leucorrhœa is a disease rather of weakness than of plethora. There is a class of cases well deserving of attention; they arise among women who indulge too freely in the pleasures of the table, and lead a sedentary life: corpulency, accompanied with debility, is produced; the abdominal and generative organs become loaded with blood, and their functions improperly performed. In these cases profuse menstruation and leucorrhœa are frequent symptoms, and require careful treatment, for, if the discharges be too suddenly arrested, apoplexy, or various serious abdominal diseases may ensue.

2. *Chronic and aggravated Leucorrhœa.*—This is the form of leucorrhœa

which is so difficult of cure. It usually arises from early neglect or bad treatment. Yet, not unfrequently, a copious discharge of this kind seems to be habitual, proving a frequent cause of sterility (from the anæmia of the generative organs), and of prolapsus of the uterus and vagina, and eventually of much constitutional mischief. In young women, chlorosis and amenorrhœa, and even phthisis, may result. We must not, in cases of local suffering and fœtid leucorrhœal discharge, too hastily conclude that structural disease of the uterus exists, but must resort to careful manual and ocular examination. With some women, and especially married women of a leuco-phlegmatic habit, whose constitution has been weakened by sexual excess, menorrhagia, abortion, or other debilitating cause, a constant leucorrhœal drain is sometimes kept up, producing few marked symptoms, while nevertheless the appearance of the patient is that of one suffering from a debilitating disease.

3. *Symptomatic Leucorrhœa*.—With many symptoms in common with ordinary leucorrhœa, there are several special ones, varying with the peculiar causes of the disease, and requiring a special treatment. Examinations carefully made, and frequently repeated, can alone assure us whether severe cases depend upon organic disease or not.

4. Dr. Ashwell makes some interesting remarks upon a *peculiar form of leucorrhœa*, which in its nature somewhat resembles hydrometra. The patient, after having long suffered from muco-purulent leucorrhœa, finds the discharge cease; a sense of fulness of the uterus and neighbouring organs follows, and after it has endured during a varying period, from four to six ounces of a fluid, exactly resembling pus, comes away in a gush, and is eventually followed by a re-establishment of the muco-purulent secretion. If an examination per vaginam be made just prior to the sudden discharge, the uterus is usually found somewhat enlarged, the cervix swollen and tender, and the os closed partially. The cases are rare, and usually difficult of cure. "I have never seen the affection in young females. Married women, and particularly widows, or those in whom the reproductive organs having been employed are so no longer, seem to be its frequent subjects."

Causes of Leucorrhœa.—As already mentioned, leucorrhœa occurs especially in the delicate and strumous, from causes inducing increased action or inflammation of the various surfaces. These are especially cold, moisture, and excitement followed by debility, arising from many causes, as sexual excess, abortion, menorrhagia, lactation, &c. The irritation of a pessary or of stimulating injections has produced the disease; other causes of irritation act *indirectly*, and by these the chronic form of the disease is produced. Thus we may see it result from amenorrhœa, as also from irritation of the digestive organs, or of the spinal marrow.

Pathology.—Leucorrhœa arises from two different conditions, viz. hyperæmia, or increased action of the secretory vessels, and debility, whether original, or resulting from the continuance of the former state.

"By some authors nearly all the cases are supposed to depend upon weakness, excepting such only as are accompanied by symptoms of inflammatory

action. There is truth in this opinion, if the examples be included where the leucorrhœa, having been of the first kind originally, has, by its continuance, terminated in the opposite state. Let it however be remembered, that it does not necessarily follow because the system generally is delicate, that the vagina and uterus must of necessity be in a state of anæmia. Still, original or acquired feebleness of system may give increased efficacy to the various exciting causes of this prevalent malady." 171.

Diagnosis from Gonorrhœa.—This is very difficult, and sometimes quite impossible, seeing that leucorrhœa is itself often decidedly purulent, and may produce a discharge from the male organs, the disease so produced being however very mild, easily cured, and seldom followed by gleet.

"The perplexity, therefore, of these cases, is fully admitted; and it will often happen, that where we are most anxious to arrive at a positive conclusion, we shall be least able to do so. At all events, it behoves the practitioner to be extremely tenacious of the reputation and happiness of parties thus circumstanced. It is always his duty to cure the disease, but rarely to venture upon the exposition of its nature. If he can positively affirm that it is of simple origin, let him do so, if suspicion has been aroused; if not, it is better to avoid any distinct allusion to the matter." 175.

Treatment.—In simple cases, wherein the natural discharge from the parts is merely increased in quantity, rest, abstinence from local and general stimuli, aperients, and a mild astringent wash, will usually shortly effect a cure. In the *inflammatory* form, which is rarer, local or general bleeding should be employed, and if the cervix uteri is swollen, red and tender, it should be leached or *scarified*. "I have now several times scarified (not punctured) the neck of the uterus by a common lancet, mounted on a piece of whalebone, with marked benefit. The pain of the incision is most trifling; there is no ulceration or suffering afterwards, and in 24 hours the cervix generally seems to be entirely free from congestion." In one case he mentions, four or five ounces of blood were thus procured in a quarter of an hour. Local baths, aperients, salines and narcotics, are all to be employed. Astringents must be delayed until the inflammatory action has been subdued and the discharge becomes more abundant, or they will do harm. At the proper time these injections, together with tonics and stomachics, are very useful. In favorable cases a cure soon results from these means, but in other cases an *obstinate oozing* of discharge continues, producing from its prolonged continuance effects, which never would have been feared from its quantity. These cases much resemble the drainings of passive menorrhagia, and like them are often cured by the injection of three or four ounces of tepid (and after a while cold) fluid into the rectum night and morning. When the leucorrhœa continues obstinately and in large quantities, an examination per vaginam should be instituted, in order to distinguish those cases which arise from organic or specific disease, from those which result from what Hunter called the "habit of action;" and this is especially requisite when the discharge is fetid or acrid. In these cases a great variety and constant change of astringents will be required, and should be used in conjunction with tonics and other means for the establishment of the health. The nitrate of silver forms the best material for injection in obstinate cases. Stimuli, such as turpentine, lytta, and copai-ba, are often given with advantage in these chronic cases.

An inveterate leucorrhœa cannot always be safely cured, without increasing other excretions and observing a spare diet, especially when it has succeeded to suppressed or diminished discharges of any kind; while in women of full habit of body and luxurious modes of life, a seton may even be required. Our attention must be especially directed to this point in patients of a somewhat advanced age, in whom congestions of various organs are more probable, as also in the strumous and enfeebled subjects. "After the cure of habitual leucorrhœa, ablutions of cold water, at least, if not injections into the vagina, should be daily practised; avoiding their use for a few days before and subsequent to menstruation." Dr. Ashwell alluding to the success said to attend the practice of the French physicians, of injecting the cavity of the uterus, justly represents it as fraught with danger.

VIII. INFLAMMATION OF THE CERVIX UTERI.

This disease, first accurately described by Sir C. Clarke, Dr. Ashwell considers of infrequent occurrence, having seen but 20 examples out of 1000 cases of sexual disease at Guy's. It rarely occurs in single women, and is most common between the age of 20 and the period of cessation of the menses, and it has been observed to occur soon after marriage. The characteristic symptoms are an opaque white discharge, and distressing pain in the region of the pubes and sacrum, "aggravated by any circumstance which causes pressure centrally in the pelvis;" there is pain also during intercourse. The constitutional symptoms are slight, and frequently the menstruation is not deranged. When neglected the affection degenerates into inveterate leucorrhœa, and may lead to excessive anæmia. The *diagnosis* of the disease is derived from discovering pain of the cervix on pressure, and the opaque nature of the discharge, which is quite white or grey, and easily miscible (its test) with water. "Let it however be remembered, that this creamy discharge is rarely copious and free from admixture, except in rising from bed in the morning, the time which ought to be chosen for examination." *Treatment.*—In severe cases local bleeding is required, while in those of a slighter character, baths and tepid anodyne injections suffice: the poppy hip-bath used for an hour twice a day is especially useful. Aperients should be given, and sometimes anodynes or suppositories are needed, to allay the irritation of the bladder, which also occasionally requires the use of the catheter.

IX. DISORDERS ATTENDANT ON THE DECLINE OF MENSTRUATION.

Dr. Ashwell considers that the opinion is too generally entertained, that the decline of this function must necessarily be attended with illness: doubtless, owing to the faulty state of the physical education of females, and to the evil influences they are exposed to in modern society, the ill effects at this epoch are frequent enough. In some cases, however, the health becomes improved and not deteriorated. The age at which the cessation occurs varies: generally it does so between 47 and 50, sometimes at 45, or in a few cases as early as 30 or between 30 and 40. In some, the change is

completed in a few months, while in others, years are occupied. The author arranges the morbid affections which result in the order of their frequency.

1. *Functional Derangements of the Brain and Nervous System.*—These are the most frequent results; indeed, hysterical and nervous symptoms so frequently accompany this change, as to call for little attention; they however sometimes reach such a height as to verge on temporary insanity. Soothing measures are found best adapted to these cases, and those of an irritating character should especially be avoided.

2. *Increased Action and Congestion of various Organs* are next in frequency, and are far from being rare, especially in the plethoric and free livers; a tendency to fulness often continues long after the cessation is complete, several persons being then liable to hæmorrhagic diseases of the head and chest. Pain and various symptoms referable to a plethoric state of the vessels of the brain are here present, the diseases of the skin are very obstinate under these circumstances, and indeed any organ (especially the uterine) may be suffering from congestion or inflammation. In *treating* these affections we should be careful not to fall into the prevalent error of regarding them as the results of debility rather than plethora, for remedies exhibited under this idea not only may encrease the state of congestion of important organs, but may also lay the foundation for structural changes. Still we must be cautious in the use of antiphlogistics, for, if these be carried too far, anæmia will result. Thus a medium practice is the best: if there is plethora, small bleedings, aperients, and abstinence will be required. Issues and setons, formerly so frequently employed, are now rarely used. Local baths and friction are useful. Care must be taken not to confound the state of pregnancy with the cessation of the menses, or *vice versa*—errors easily made under some circumstances.

3. *Lesions of Structure and Malignant Disease.*—Dr. Ashwell doubts the propriety of the opinion, which connects the period of the cessation of the menses with the original production of organic disease of the breast and uterus; believing, however, that a latent tendency may then become developed, especially when the uterus is in a state of congestion, and means for its relief have been neglected. Frequent examinations of the suspected organs are essential to the formation of a satisfactory opinion.

In concluding our analysis of this work, we may again express our opinion that it is an excellent one, and calculated to be of great use to the young practitioner, especially as it is enriched (and not overburdened, as is too often the case) with a selection of illustrative cases, and a very useful collection of prescriptions. One of Dr. Ashwell's reasons for its publication is admirable. "I have long entertained the opinion, that practitioners who hold important public appointments are bound, so far as their sources of authentic information can be made subservient, to improve and encrease the common stock of professional knowledge." Would that more of the medical officers of large institutions would follow his example!

OFFICIAL REPORT ON THE MEDICAL TOPOGRAPHY AND CLIMATE OF CALCUTTA, WITH BRIEF NOTICES OF ITS PREVALENT DISEASES. ENDEMIC AND EPIDEMIC. By *James Ranald Martin*, Esq. Presidency Surgeon, and Surgeon to the Native Hospital. Printed by order of Government. 4to. Calcutta, 1839.

THE "Notes" on the Medical Topography of Calcutta were noticed in a former Number, and Mr. Martin, in his preface, states that, to this favourable mention, and that of Sir James Macgregor, is due the present enlarged Report, containing more than a third of matter entirely new.

From the preface also we learn, that to its author is due the comprehensive plan of calling on the medical services of all India for reports on the medical topography and climate of all the more important localities, and indeed of the country generally. This plan of Mr. Martin's, he states, "was carried into effect in 1835, through the direct act of the government, the medical board's opinions having afforded it but a very equivocal support."

Again, in 1838, it appears that Mr. Martin proposed to the same board to remodel the existing forms of hospital reports, which are now very defective, with a view to elucidate by medical statistics the important subjects of tropical climate, its diseases, and the results of treatment. "My plan," says Mr. Martin, "I regret to say, did not obtain the sanction of medical authority; and so this important matter remains, for the present at least, in abeyance."

The preface then concludes—"There are two points which I have endeavoured to keep continually in mind—namely, the investigation of climate in its most extended sense, and secondly, its influence on military health; for it should never be forgotten here, however we may be circumstanced, that it is mainly for the care of the troops that medical officers are sent to India."

In a postscript we learn that the municipal committee, composed of the Honorable the Judges of the Supreme Court of Calcutta, the Lord Bishop of the Diocese, and several gentlemen, European and native, originated with Mr. Martin, and that he was a member of it. The report of this committee drawn up with singular ability by the chairman, the Honorable Sir John Peter Grant, and comprising 245 pages, is in our possession.

A glance at the improvements suggested by this committee will shew the extent of its labours, and the importance to the capital of British India of their being adopted—they are as follows:—

- 1st. "A new and complete system of drainage.
- 2nd. The more perfect ventilation of the city by the construction of new open streets and roads, and the removal of old buildings and walls.
- 3rd. The cleansing, clearing jungle, and levelling of ground in and about the city.
- 4th. Construction of large new tanks, and the supply of water for all purposes.
- 5th. Clearing and draining of the great salt water lake.
- 6th. Improved construction of the native habitations.
- 7th. Widening, paving and making streets and roads.
- 8th. Improvement of the public markets, &c. &c.
- 9th. Better regulation of the police, general and medical.

10th. Removal and regulation of burying grounds.

11th. The establishment of a great central hospital for the reception and cure of natives suffering from fever and other diseases incident to the climate, and the establishment also of dispensaries dependent on it.

12th. The various rents, taxes, assessments and tolls.

13th. The lottery for the improvement of Calcutta.

14th. The conservancy in all its parts.

15th. Suggestions for new modelling the police.

16th. Plan of taxation for perpetuating and carrying on the improvements of the city and its suburbs."

"The mere perusal," says Mr. Martin, "of the above abstract, will afford a sufficient coup d'œil of the actual condition and wants of the city."

"That there are causes constantly in operation here, *and which may be easily removed*, that tend to produce great public unhappiness, by abridging both the usefulness and the term of life, any one may see; that it is the duty of the government—the only moving power in India—to obviate all these causes, no one can reasonably doubt."

Passing over the details of the medical topography of Calcutta, we come to the following observations, prefatory to a description of the physical climate of Bengal.

"Whoever considers climate, with reference to its vast importance to human welfare, must feel some degree of disappointment, if not astonishment, at the meagreness in which the advanced state of knowledge in the nineteenth century has yet left this most interesting branch of inquiry. One philosopher will view climate as any space distant from the equator and poles; another, as nothing more than a well arranged table of the winds, of thermometric, barometric and hygrometric degrees; a third, as having reference solely to elevation above the mean level of the earth's surface; a fourth, as consisting only of the internal heat of the globe; while a fifth, supposed to be better informed than all the rest, pronounces climate to be influenced only by latitude and local elevation, and allows it to be but slightly affected by any other causes. We may, then, with some shew of reason exclaim with Dr. A. T. Thomson, what is climate?"

Mr. Martin considers that, in this inquiry, "much that is important may be done by a careful observation and comparison of facts, made at different times and places; for it is by such means that a science like that of climate can alone be perfected." * * * "The value of all scientific facts depends in a great measure on being comparable, and this in an especial manner applies to inquiries relating to climate and medical statistics. I am satisfied that, in a professional sense, it is impossible to take too extended a view of climate, and that he who succeeds best must follow the indication of Cabanis—*l'ensemble de toutes les circonstances naturelles et physiques, au milieu desquelles nous vivons dans chaque lieu*; for this much is certain, the framers of elaborate tables of the winds and the degrees of the thermometer have as yet done little either to inform our minds or guide our inquiries."

After quoting the arrangement of Malte-Brun, and adding to it, the author states that, "by tracing these causes, and by uniting and arranging under general points of view, the results of particular local observations, we shall arrive at an approach to climatology, in some measure corresponding to the present state of the other science."

The next article is on the "Influence of the Hindu Superstition and

Morals on Health." It begins as follows:—"We have not to travel to the banks of the Ganges to learn that the uninstructed man cannot even read the true character of the Deity; that the works of nature address their eloquent language to him in vain, that the destiny of man is obscurely beheld by him, and that it is only as he advances in knowledge that he becomes capable of receiving and comprehending divine truths, abandons ceremonies stained with blood, and tries to imitate the goodness which he then alone discerns in action all around him." The moral effects of caste are described by the author as follows:—"If we take a general survey of the institution of caste among the Hindus (and without doing so we can know nothing of the natives) we are inevitably led to the conclusion that it wars with every passion of the human mind, good as well as evil, and that, being prejudicial to public happiness, it is eminently injurious to public health. In it we find none of the purifying influences of the Eleusinian rites of the Greeks, whereby both Isocrates, and Cicero in later times, considered that their morals and civilization were so much advanced." * * *

"On the contrary, in the Hindu act of devotion there is not a vestige of reference to the divine attributes, nor to moral duty. The Hindu rehearses in his mind the form of God, his colour, the number of his heads, eyes, hands, &c. and nothing more; and he who preserves his caste need not disturb his mind on any other subject connected with moral or religious obligation. If there is any part of his conduct with which his religious ideas have no concern, it is his moral character."

The physical ills of caste are not less numerous or important. They comprise the early marriages, which Mr. Martin states to be "one of the most pervading injuries inflicted by caste on public health;" polygamy also "that source of a thousand evils; festivals of frequent recurrence, leading to every species of vice, exposing thousands to all the inclemencies of season, producing every variety of disease and misery, mental as well as bodily."

On diet Mr. Martin observes—"It has always appeared to me a great mistake to view the diet of the Bengalee *as prescribed by climate*; on the contrary, I believe it to be far below the standard required for his support under all the changes of his seasons: in the hot weather and rains it is insufficient to supply the great waste; and in the cold season its poverty is alike injurious to health."

"Whether the founders of the Hindu faith were aware of it or not is immaterial to the present inquiry: but there can be no question that by depressing all the physical energies, through a diet purely vegetable, they fastened with a stronger hand the moral bonds of Brahminical domination on the people."

The remarkable fact is there stated that, owing to the better food and clothing of the Mahomedan portion of the inhabitants of Calcutta, but one in 38½ die annually, whereas of the Hindus, the annual mortality is one in 17½.

Preparatory to an account of the institutions for the education of the natives, we have the following observations:—

"Two circumstances appear calculated more than all others to keep the people in their present state of moral degradation; the first and greatest is the caste, the second is the want of any national plan of education."

The extinguishing influence of caste has been elsewhere spoken of; and here it only remains to remark briefly on the other great evil—the absence of education.”

“In most European communities, education is a national affair—a part of the political system—and has for ages been subordinate, in the best regulated of them, to what is termed the law of society, and to that assemblage of opinions, customs, and habits which is not inappropriately called, by some writers, the positive morality of society, or the law of opinion. Now, here the people have never had any of these; and so long as they and education are wanting to the society of India, it cannot possess a shade of sovereign or independent quality, but must remain in its present anarchy. The people must look upon us as strangers, and we must look on them with the reserve of conquerors.”

On the prevention of disease, Mr. Martin observes:—

“The admirable rules prescribed by Dr. James Johnson regarding dress, food, drink, exercise, sleep, bathing, &c. &c. and the regulation of the passions, are well known; but perhaps better known than regarded; they are like the vital points in religion and morals—all men agree in them, yet how easily are they forgotten! In order to think seriously on health, most men require to suffer from disease: the lessons derived from such experience are longest remembered.”

“There is one circumstance which ought to be impressed every where on the public, and it is; that however useful medicine may be in moderate and judicious doses, under occasional circumstances of change of season, or during certain epidemics; it is yet more on the proper selection of localities, the avoidance of day and night exposure, and care in diet, exercise, clothing, &c., that disease is to be prevented, and not by a system of self quackery, with calomel and other mercurial preparations, such as many persons pursue in this country to their great injury, for the removal of what they call ‘biliousness.’

Many is the strong habit I have seen impaired by this senseless custom: and I have known several lives lost, and others put in jeopardy, by the use of saline purgatives during seasons of cholera.”

“Another extensive source of disordered health I must here mention, as it has come frequently under my notice: I mean the long-continued use of aperient medicines containing the mercurial preparations. It is common for patients to obtain from their physicians aperient pills, for instance, containing some portion of calomel, or blue-pill. This may have been given with a particular view, or for an especial occasion only; but it often happens that the patient continues for months, and even for years, that which was intended to be used but for days, or weeks. The results are very lamentable—I have seen persons in a state of nervous irritability, bordering upon insanity, from this cause, with a subacute inflammation of the mucous digestive surface, and chronic pyalism—all resulting from the long-continued and frequently unconscious use of mercury.

One field officer used blue-pill and colocynth for two years and a half; and an American gentleman took the same preparation with ipecacuanha, during a voyage from a sister presidency to America, and back to Calcutta. It is needless to detail how ruined were the healths of both.”

On the physical management of European children in Calcutta, Mr. Martin observes—

“The diseases of childhood run their courses very mildly in Bengal, and upon the whole, it cannot be said that, under proper management, the climate of Calcutta is unfavourable to infant health up to five or six years of age, when, however, the offspring of Europeans generally begin to shew the necessity for the change of climate, by out-growing their strength. This portion of medical

statistics, however, is quite as unsatisfactory as all that relates to the subject in India; but I believe the results of a close observation would afford corresponding facts to those obtained in France and England, viz. that the greater mortality exists under the extremes of temperature—the very colder, and the hotter months."

The remarkable fact is then stated, that "amongst the better classes of European adults in Calcutta the ratio of mortality is greater than that of infants in the proportion of five to one, while of the poor degenerate Portuguese, that of children exceeds adults in the ratio of four to one."

Fort William is stated, on the authority of Dr. Burke, to be one of the worst, if not the very worst, of the military stations in India for the soldiers' children, the annual mortality being 16.29 per cent.

Lind speaks of "child-bearing as peculiarly fatal" in his time, but it appears now to be quite the contrary; for, during sixteen years that Mr. Martin was familiar with the state of health of the better classes of Europeans, but one death occurred connected with parturition. The mortality spoken of by Lind, Mr. Martin ascribes to the management having, in the olden time, been left entirely to native nurses, whose ignorance is said to be dreadful in its consequences to all who venture to trust them.

On the subject of rearing children entirely in Bengal, Mr. Martin observes:

"That it is impracticable on the ground of experience, for that after much care the third generation from unmixed European stock is nowhere to be found; so much for the question of European colonization, on which a great deal has been said and written here, without ever reflecting that Nature had already set her ban upon it."

We come next to a chapter "On the Mortality of the Native and Foreign Races"—a task of great labour and difficulty, owing to the neglect of medical statistics by the medical authorities in Bengal.

This subject Mr. Martin has repeatedly urged "in what he thought the right quarter, and in the most emphatic manner; but though his proposition met with no very flattering reception, he has yet the satisfaction to know that he has produced some action, tardy perhaps, yet such as will lead to some ultimate improvement."

"We are in India continually kept in mind of that law of our nature by which the activity of men decreases in the ratio of their senility, causing that inertness and disinclination from undertaking any thing, however excellent, of which they cannot be expected to see the end."

Prefatory to elaborate tables, and the comments upon them, Mr. Martin observes that—

"In any enquiry as to the duration of life, and the causes of mortality amongst the natives of Bengal, we must consider, not only that general climate and temperature have great influence upon the longevity of different races, by accelerating or retarding the development of the human system, but that along with the worst climates, all the institutions and habits of the Bengalees tend powerfully to abbreviate the term of life: their premature decay is in perfect accordance with their early and forced development."

"The law of correspondence of the period of puberty with the whole term of life is subject to few exceptions, and has been well expressed by Lord Bacon in

his *Historia Vitæ et Mortis*, by 'Natures's finishing her periods in larger circles.'"

By a table, at page 168, we find the annual deaths in Calcutta as follows:—

English and Eurasians	..	..	..	1 in 28
Portuguese	..	..	..	1 in 8
Mahomedans, Moguls and Arabs	..	..	..	1 in 36
Hindus of various races	..	..	..	1 in 16
Armenians	..	..	..	1 in 25
Native Christians	..	..	..	1 in 14

After a commentary on the above table, Mr. Martin observes that, "so injurious is the climate of Bengal proper to the Hindu soldiery of the army, in comparison with their own climate of the upper provinces, that, although only one-fourth of the troops are stationed in Bengal, the deaths of that fourth are more than a moiety of the whole mortality."

"That it was not less fatal to their Mahomedan predecessors of the Mogul dynasty is evident from the following translation of Gladwin, from the Persian:—In former reigns the climate of Bengal, on account of the inclemency of the air and water, was deemed inimical to the constitution of Moghuls and other foreigners, and only those officers who laboured under the royal displeasure were stationed there; and this fertile soil, which enjoys a perpetual Spring, was considered a strong prison, a land of spectres, the seat of disease, and the mansion of death."

The average mortality of the European soldiery in Fort William is stated in a table, for 20 years, at 76½ per thousand of strength; but Mr. Martin thinks that, including invalids who die within a year of their departure from India, and the correction of other errors, the actual mortality will approach 90 per thousand.

A table is then given to shew that in India, as elsewhere, age materially influences mortality, the annual ratio per thousand of colonels being 59—4, while that of ensigns is but 23—4.

A series of tables is then given to shew the influence of season on the mortality of both natives and Europeans. They all agree in proving that the most fatal period of the year is from September to January inclusive; November being the month in which the greatest number of deaths occurred from ordinary endemic disease, while May is found to be "the worst of the cholera months."

The next article is on the epidemic disease of Calcutta.

"I know no branch of medical inquiry more interesting than the history of epidemics, or one that would prove more useful to practitioners in whatever climate. How true it was, as declared by Sydenham (and it unhappily continues so to this day) that no one has treated this great question 'in proportion to the dignity of the subject.'"

"A history of our local epidemics would be of great value, as enabling us to trace their connexion with changes of climate and condition of the surrounding localities, or with social conditions of the people, both European and Native; and had such an history existed, it would have helped to an earlier establishment of general principles, and a rational plan of treating our fevers especially; for, though all the epidemics within my personal recollection (and there is scarcely a year we have not one in some form) differ essentially from the ordinary endemics of the country, still, there will be found in most of them, so

much of the savour of the soil, if I may be allowed the expression, as to render a knowledge of their history and treatment an object of no mean importance."

Mr. Martin then goes on to state that "endemics are very often the parent stock upon which the epidemics are engrafted;" but that our means of prevention apply equally to both, inasmuch as each "are found to *fasten with peculiar severity, and remain longest in such localities as are neglected.*"

CHOLERA.

"It is impossible to say any thing satisfactory on a disease, which would seem every year to become a greater source of difficulty to medicine. In the stage of collapse it has too often proved to physicians what traumatic tetanus is to surgeons, a disease, according to Hennen, which, once fully formed, tended more to shew him what he could not trust to, than what he could place the smallest reliance on. My notices of cholera, then, will comprise merely such desultory observations respecting the local history of the disease and its treatment, as my personal experience in various parts of India and Ava enables me to offer: for, as to its remote cause, little or nothing is known: like the pestilences of the fifth century before the Christian æra, it has in a manner travelled up and down over the habitable world, returning often to the same place after a certain interval; pausing sometimes in its fury and appearing to sleep, but again breaking out on some point or other within its range, till, at the end of its appointed period, it disappears—I fear we cannot yet say—altogether. The first impression of the morbid cause would appear to be made on the system of organic nerves and their functions; for almost immediately we have the vital actions circulation, respiration, the generation of heat, and secretion, conspicuously disordered, and that probably through some unknown changes in the electric condition of the atmosphere."

"When I first entered on military practice in 1818, the disease had some marked points of difference in the symptoms and in the means used to combat them, from those of more recent visitations of the epidemic. Formerly, simple venous congestion of the most aggravated nature seemed to form the most essential feature in the disease; and the spasm, which was of a clonic character, could be referred to the oppression of the nervous energy following on concentrated cerebral and spinal congestion. It is on the supposition of the condition stated forming the leading feature of the disease in former times, and of the organic nervous function being less involved, that I would account for the efficacy of blood-letting then; for latterly, there seems a depression of the vital actions, which has greatly embarrassed our treatment, and deprived us altogether of the former great resource, blood-letting."

To illustrate the differences here spoken of Mr. Martin states the cases of two men whom he treated very early in the history of the epidemic in Bengal, and in his own practice;—one was that of a soldier of the 59th Regiment, in whom the spasm was so severe that it required four men to hold him down. "He was bled profusely, and in a few hours he recovered." The other case took place some years later in the Governor-general's body-guard of cavalry.

"I found that during the night he had been drained of all the fluid portion

of his blood; his appearance was surprisingly altered. The respiration was oppressed, the countenance sunk and livid, the circulation flagging in the extremities. I opened a vein in each arm, but it was long ere I could obtain any thing but a trickling of dark treacly matter; at length the blood flowed, and by degrees its darkness was exchanged for the hue of nature. The man (an European), though not robust, was bled largely, and he, whom but a moment before I thought a dying man, stood up and exclaimed, '*Sir, you have made a new man of me.*' How surprising to find that a few years more, and the same treatment would, within the same time, have proved as certainly fatal. To appearance, we have the same symptoms, in the same order; but these signs are fallacious; and the treatment which proved most successful if used early in the disease, during 1818—22, no man will now dare to put in practice:—why is this? Is it that in the more recent visitations of the epidemic, we have, from its vary onset, a greater depression of the organic nervous energy than was observable during its earlier history? I think so, and that such depression constitutes the chief, if not the entire difference now-a-days."

"Since the first outbreak of the epidemic in Bengal, it has spread westward, and over the nations of Europe and of America; yet, on a careful review of its history in all these countries it does not appear that any addition whatever have been made, either to the Indian pathology or treatment of cholera. I do not make this assertion in disparagement; far from it, but to shew the great difficulties of these questions."

"Of the pathological state which actually constitutes the disease, we shall probably never know much. There is, in rapidly fatal cases, a great exhaustion of the power of generating heat; the air expired from the lungs becomes progressively colder; and so do all parts of the body, until they are merged in that of death; but these and the other destroying states already mentioned leave no traces behind."

"In protracted cases again, congestions, and even inflammations of various organs are frequently discernible after death; but these form only consecutive, or superadded events in the morbid chain, like the final oppression of the cerebral system of nerves, which occasionally become obtunded through the stagnation of the circulation, and consequent want of red blood. In the last stage of acute seizures, however it is surprising how some retain their mental integrity to within a few minutes of dissolution, while others are for hours narcotized by the disease."

"Here, as in all epidemics, it may be laid down as certain, that whatever tends to disturb the balance of health, may lead to an attack of the prevailing disease. Hence, it is to the observance of preventive rules that communities will always owe most."

"The avoidance of day and night exposure, and, in short, all those rules applicable to ordinary prevention should here be rigorously attended to. The diet at such seasons should be nutritious, dry, and moderately stimulant, and all food should be easy of digestion. I have known several instances wherein the use of the shell and sable fishes of this river have led to an attack of cholera, apparently through their difficulty of being well digested. Cold ascendent fruits and vegetables ought likewise to be avoided. An empty state of the vessels, hunger, thirst, fatigue, and debility, give rise to activity in the process of absorption, and this would appear to explain how persons enfeebled by debauchery and loss of natural rest are more liable to be affected by diseases, whether epidemic or contagious. It is thus also that fear would seem to act. Another caution applies to the use of purgatives, and especially those of a cold saline nature: many cases have occurred within my recollection of the disease being thus insinuated and mistaken for the action of salts, until the speedy approach of the stage of collapse made the real nature of the case but too apparent. When purgatives must be used in such seasons, they should be of a warm

aromatic nature, and it ought to be a fixed rule never to exhibit them over night, that being the ordinary time of invasion. It must not be forgotten, too, that fevers, and bowel complaints especially, are very apt, under the epidemic influence to merge in cholera."

TREATMENT.

"Details of medical management can have no place in a work of this description; but this much must be evident, viz. that in a disease, acute beyond all others, treatment, to be successful, ought to be applied at the onset; life may then be saved in a very large proportion; but, if unhappily the first few hours are lost, it too often follows that unavailing regrets take the place of hope, and that the best efforts of the physician are set at naught.

I have stated that the plan by copious blood-letting, followed by full doses of calomel and opium, was that found most successful on my arrival in the country, in resisting the onset of the disease; and when re-action took place, topical bleeding was used to relieve local affections, and repeated mercurial purgatives completed the cure."

"When, however, no such happy condition was present, but the opposite one of collapse of all the vital powers occurred, we were then, as now, very much wanting in an available resource, notwithstanding the free use of every mode of stimulation."

"It is very true that we occasionally see surprising instances of recovery from apparently hopeless sinking of the nervous and vascular energies: but candour will oblige all men to avow that, though such cases are saved by the assiduous exhibition of stimuli, yet it is equally true that the majority of them die now, as they did in our earlier experience; and I repeat that our European and Transatlantic brethren have not helped us through any of our difficulties in the management of this stage of the disease."

"A full dose of calomel with opium will save life in a majority of cases if used early;—and this fact ought to prove a great encouragement to all who will think on the subject as it deserves.

It will be seen then, that excepting the blood-letting, which we have been obliged latterly to abandon as deadly, our practice remains much the same it was at the commencement of the disease in 1817:—that is, the stimulating plan of treatment, first adopted here, seems to have now become the general one in all countries."

"It appears that in the Calcutta general hospital, out of 803 Europeans, admitted in all stages of the disease, 372 died: at Madras 23 per cent. of the Europeans and 45 per cent. of the natives died; while in England 38 5 per cent. died: in Prussia 54.6; in France 100,000 out of the entire population. March, April and May are the months in which the disease generally prevails, but May is much the most fatal.

In England half the deaths occurred in the first 24 hours, shewing the urgent necessity of early treatment in this disease; for what is to be done must be on the instant. In the epidemic visitation of 1838 in Calcutta, the deaths that I witnessed took place from two to twelve hours from my first seeing the sufferers. Here there was time—every thing in cholera—irrevocably lost."

Passing over the history of such other epidemics as came under Mr. Martin's personal observation, we come to the endemic diseases of Calcutta, and first, of Intermittent Fever.

It appears that, owing to the "hitherto gradual and almost imperceptible improvements of the ill-chosen locality, intermittent fever has become a mild and infrequent form of disease in modern Calcutta, while in former times it constituted far the most severe and fatal cause of fever; the cold stage, according to the older writers, lasting *'twelve hours.'*"

"The fevers here mentioned would seem to have possessed the malignant character of the *febres intermittentes algidæ*, described by Torti, in which the power of generating heat was so impaired that the patient died in the cold stage at the end of two or three accessions."

TREATMENT.

"With exception to the cases of some delicate females, I do not recollect any that resisted the ordinary management by general or local blood-letting, according to the severity of complication; purgatives and sudorifics, with quinine during the intermissions."

Mr. Martin's experience does not enable him to speak favorably of bleeding in the cold stage of intermittent. On the contrary he recommends that, "when general blood-letting is had recourse to in the treatment of intermittent fever, whether simple or complicated, it should, as in the case of all other fevers, be performed at the very onset of the stage of re-action."

"Practised at this period, it will lessen arterial action, relieve venous congestion, usher in the sweating stage, and thereby pave the way for quinine, purgatives and sudorifics, on which the prevention of recurrence must depend."

"In feeble habits, or with persons who have resided long in India, local depletion, by leeches, will answer every purpose."

REMITTENT FEVER.

"In noticing the more ordinary fevers of Calcutta, whether endemic or epidemic, the first observations that force themselves are, their great differences as to intensity, in the present, as compared to former times; and secondly, the causes of this difference."

"The earliest account we have of the state of public health, and of the period of greatest mortality, in Calcutta, is that already quoted from Captain Hamilton, wherein he mentions 460 burials out of 1200 British inhabitants, from August till the ensuing January: this was between the years 1688-1723."

Notices are then given from Clark, Stavorinus, Ives, Bogue and others, of the fatal nature of the fevers of Calcutta in their days.

"That a scorbutic taint was universal in those times may, I believe, be admitted; and this circumstance will readily account for the general term 'putrid,' as applied by the older writers to the endemic fevers and dysenteries: this unfavorable complication will likewise go far to account for the mortality."

"Of just or useful comparison therefore between the results of former and recent general hospital management, there can be little or none; but, I think, this much may be allowed in favor of the modern plan: that, in consequence of our greater freedom of depletory means, by blood-letting especially, we have fewer of the sequelæ of fevers, viz. enlarged liver and spleen, than existed formerly; for, in the military hospital at Madras, in 1782, we find by a monthly report of Mr. Paisley, the surgeon, that there were then in the house—

Venereals	50
Quotidian remittents	2
Simple bilious fevers	30
Bilious fevers, with visceral obstructions	15
Simple fluxes	20
Liver fluxes, and fluxes from visceral obstructions	98
Chronic visceral obstructions from impaired habits	69

Total 284

"Thus it appears, that out of 284 cases in hospital, 182 laboured under some form of visceral obstruction: that is organic disease of the liver or spleen, or both, in a more or less acute form, and in either case rendering death more or less remote, a necessary result.

It is here then, and not in the comparison of actual mortality within the wards, that our hospital management contrasts favorably with that of the olden times."

"If tropical fever and dysentery were always simple morbid actions, no doubt, as recommended by some, bleeding and purging might in general prove adequate to the cure; but unfortunately in both cases, we seldom find this unmixed condition to hold in actual practice in Bengal, where we have in our fevers continually to combat dangerous abdominal complications, with the addition, in the hot season, of the cerebro-spinal—all demanding a more or less complex and careful treatment—a speedy unlocking of all the secretions and excretions, which the most ample experience proves that bleeding and purging *alone* will not effect. Yet bleeding, here, as in dysentery, is the standard remedy, subject to age, constitution and length of residence in India. It precedes all other management in the order of time, and in point of importance. I believe this to be the general view taken of it by the practitioners of this city; and it is but common justice to say, that the value of this most powerful of all means was first emphatically urged on the Indian surgeon by Dr. James Johnson: it is to him we owe that blood-letting has become a systematic part of our treatment. Of the several valuable authors besides, who have since followed him, and helped to fix the professional attention, I need say nothing."

"Subject only to the limitations already stated, bleeding—early and copious bleeding, and practised at the very onset of the stage of re-action—is very generally necessary in the severer forms of Bengal remittent fever; then, full doses of calomel with sudorifics, short of producing salivation, with saline purgatives in the intervals. If the disease does not now yield, but on the contrary, if the paroxysms recur at shorter intervals, and with increased severity, leaving but imperfect remissions—then there is imminent danger, and inflammation or acute congestion in some important abdominal or other organ, may be more than suspected. For this, in addition to topical bleeding and cold to the head, when the seat of disease, mercury in small repeated doses, with antimonials, must be given so as mildly to affect the system: it is the only known means of saving the patient, by anticipating the destruction of some organ essential to life; it here becomes in the apt words of Dr. Robert Jackson, a remedy of necessity."

"Where the remissions, on the other hand, are well marked, quinine should be given in full doses, without waiting for every thing. Some practitioners recommend that, before this drug is used, we obtain previously a clean tongue, natural secretions, and the absence of all heat of skin or local affection. I believe this to be a very dangerous practice; if we are to wait for every thing, we shall often wait too long, or till it is too late. I have always administered quinine in the more favourable cases now stated, in disregard of certain local abdominal complications, (those of the head should in general exclude it,) believing that if I arrest the paroxysm, I do greatly more towards the cure at large, than quinine can possibly do of harm to the local affection—the treatment of which by local depletion and counter-irritants is not interfered with by this means: again, all tenderness on pressure or local pain, does not, in the case here stated, necessarily constitute inflammation."

"Almost all our complications in the fevers of Bengal are abdominal, whether these be of an inflammatory nature, congestive or of mere irritation: and this would seem to be the cause of the apparent prostration, with tendency to collapse, so common especially during the rainy season with us; for even within a few hours, as contrasted with similar affections of the head and chest,

there exists here an oppression of the vital functions, alarming to the stranger physician."

"The prostration produced by a violent blow on the abdomen more nearly resembles the febrile collapse than any other morbid condition with which I am acquainted; it is probable that both depend on the disturbed function of the great sympathetic—the powerful though silent source of many symptoms known to us only by their effects."

"This tendency to sinking is the reason why our measures of cure must be so guarded as to the time of using them;—for there is no country in the fevers of which more regard must be paid to the stage of disease, for applying remedies, especially blood letting, than in those of Bengal; what was a saving means at the commencement of the paroxysm, is as surely destructive at the end of it."

"I cannot conclude these cursory remarks without adverting to the importance of the management of convalescence from fever—not the least serious of the duties imposed on the Indian physician. In all cases of recovery from fever, but especially in those wherein the complications have been severe, or where important organs have been affected in the course of the fever, or as a sequel to it, it is impossible to be too careful in the diet, and in attention to the nature and activity of the secretions;—and this vigilance must not be relaxed until perfect health is re-established. How often do we see patients who have been well enough treated during the acute disease, but on whom the neglect of this rule of practice entails enlargement of the liver or spleen, or other visceral engorgements, requiring a protracted sea voyage, or even a return to Europe at great inconvenience. This is a subject that should always be present to the mind of those who have the management of military hospitals wherein the perfect re-establishment of the soldier's health, before his return to barracks, should be a maxim never to be swerved from."

"This is not the place for reviewing medical books, or laying down general rules of practice; but it cannot be too much or too often impressed on the Indian surgeon, that it is on his careful attention to the phenomena of fever that nine-tenths of his usefulness depend. I have here attempted an outline of the treatment of the endemic fever of Calcutta, and of Bengal generally; it will be found to correspond in principle with that of the endemic fevers—the bilious remittents of the world—whether east or west:—they are all fevers of locality, and do not by any means differ so much as medical writers of partial views and partial experience would have us believe:—their supposed differences, or nosological divisions, are more frequently the work of man than of nature: they may, and do differ in degree of intensity; but their essential phenomena, and the organs affected in their progress, so as to endanger, or ultimately destroy life, are the same; and so likewise are the essential parts of their treatment."

DYSENTERY.

"If dysentery were a disease of uniform character, and having an uniform *cause* and *seat*, then it might, perhaps, always be treated after an uniform plan; but a very slender experience of this disease, especially as it prevails within the tropics, or even within the British Islands, shews this not to be very generally the case; for although some portion of the larger bowel is universally implicated, yet, either from the first, or during the progress of the disease,—for we cannot often say which—the lesser bowel—the liver, the spleen, the pancreas, and mesentery, become also the frequent seats of morbid action, so as to modify the disease, and likewise its right treatment."

"In the dysentery of Ireland, Dr. O'Brien found 'the liver diseased in one-half of the dissections, the spleen in one-fourth, the small intestines in two-thirds,

and the colon and rectum in all." The pathology of our dysenteries, whether in Southern or Northern India, and as given by the best authors, sufficiently establishes that morbid action in this formidable disease is not confined here, any more than in Europe, to the course of the large intestine, but that all or most of the associated organs are found after death to be more or less deeply implicated, just in proportion to the extent and severity of the symptoms during life."

"It appears to me that to a want of just consideration of these inevitable pathological complications must we ascribe the system of exclusive treatment so much reprehended by the author quoted at the head of this article, and the excessive abandonment also, by the surgeons of fleets and armies, of every exclusive plan hitherto proposed, almost as soon as it has been tried."

In this article, as in that on remittent fever, Mr. Martin gives a catalogue-raisonne of the treatment of these diseases as they prevail both in Europe and within the Tropics, by more than twenty of the best known authors, exhibiting some considerable variety in practice it is certain, but within latter years coming to a close agreement on the general principles of management.

"It only remains to notice the prevailing treatment of the dysentery of Bengal, amongst the more experienced practitioners at the Presidency, and this I shall insert in the order of importance. Blood-letting, general and local, as first practically urged in the dysentery of India by Dr. James Johnson, takes the lead, and has done so for many years: it is the standard remedy; and I believe that when the subject comes early and freely under this treatment, and that the case is not complicated with hepatic congestion or other actual disease, little else than a few aperients and sudorifics will be required for the cure; but, as in most cases of this formidable disease as it appears within the tropics, the diseased state of the large intestines is essentially mixed up with general abdominal complications, other and important means follow the bleeding; and of the first are those which act powerfully on all the secreting organs, internal and external—such as calomel in full doses with antimony, or with ipecacuanha, followed by laxatives, sudorifics, warm baths, enemas and other minor adjuvantia. I believe this to be the general course here, and I have seldom seen calomel carried the length of salivation, neither do I consider this degree of effect necessary to the cure."

"The late Mr. Twining, in his clinical work, advocates the use of simple ipecacuanha powder, combined with the bitter extracts, which plan he described as very successful. I am not aware that this system has been followed by any of the other practitioners of the general hospital, where Mr. Twining officiated for several years; neither would it appear to be successfully imitated in the provinces."

"Dr. Macnab, in a very judicious and practical report on the dysentery of the native soldiery of Hindustan, when serving in Bengal, says, that 'blue pill with ipecacuanha and gentian proved a complete failure,' as has generally been the case in my trials of it. Indeed I much suspect that Mr. Twining overrated the value of this favorite remedy, and that he may also have miscalculated the anti-emetic properties of the gentian."

"Ipecacuanha has been a favorite remedy in the south of India for upwards of forty years past. Dr. Whitelaw Ainslie, after an experience of thirty years, and an extensive practice amongst all classes of Europeans, says of this drug, that it 'has no equal in simple dysentery, that is, dysentery not accompanied with hepatic derangement: it has the happiest effects.' This is an observation of great practical importance, and, I think, impresses a just discrimination in the use of this valuable remedy. In speaking of an experience now of twenty years, and an extensive range of observation of the disease as it occurs in hos-

pitals and private practice in this city, also as it appeared amongst the troops serving in the unhealthy provinces of Orissa and Guudwauah, and in the army at Langoon and Upper Ava, I should say, with Dr. Ainslie, that it is alone in *simple uncomplicated* dysentery that ipecacuanha shows its best effects administered as an *exclusive* remedy; that is, after bleeding and moderate purging."

"In the hepatic form of dysentery—no uncommon complication in Bengal, especially during the cold season—calomel is absolutely necessary to the cure. I lately treated for this form of the disease a gentleman who had suffered much from the Batavian fever contracted at the capture of Java; he was bled generally and by leeches, followed by purgatives and sudorifics; but no amendment took place, and nothing was voided but mucus and blood. Two tub doses of calomel and antimony were then given, which produced copious biliary discharges and immediate relief; a few doses of blue-pill with ipecacuanha, and purgatives, concluded the treatment. There existed in this case no enlargement of the liver, nor uneasiness on pressure; but there was a total absence of biliary secretion; and until that was restored, the other treatment afforded no relief. Another case of very severe hepatic dysentery requiring measures of great activity, was marred in convalescence by soup taken contrary to my directions; the liver became painful as ever, and the dysentery returned, requiring a repetition of general and local blood-letting, mercury, &c., and that under circumstances of greatly reduced strength. I have seen many cases in which morbid action seemed co-existent in the liver and cæcum, and I would beg to call attention to the subject. I believe that cases of hepatic complication, treated without mercury, frequently terminate in inflammation and chronic abscess of this organ."

The last article but one is on the inflammation of the parenchymatous structure of the liver.

"This is the most dangerous disease I am acquainted with, because of its insidiousness, and the total absence of urgent symptoms; the process which leads to destruction is here silent and rapid. It has not been sufficiently dwelt on by writers on the diseases of our climate. It chiefly attacks the feeble of constitution, the lax of fibre and fair of complexion; it often terminates the career of the old Indian."

"Whether existing in the older resident in Bengal or the new comer, it is generally a disease of the cold season, and caused by night exposure;—in short, by any means that determine powerfully from the surface to the internal organs. I have seen cases where it was caused by the chilling thorough draughts of our northern entrances to the Calcutta houses, after leaving a crowded room; and others, where it was occasioned by exposure before day-light for the purpose of hunting."

"The disease is sometimes preceded by a perceptible falling off in the general health, such as some degree of emaciation, dry cough and embarrassed respiration, loss of appetite, and sallowness of complexion; but it more generally comes on in the midst of apparent health. There is a general feeling of abdominal uneasiness, but more particularly of the epigastric region and that of the liver, with some degree of fever, preceded by slight rigor or ague; but all these are so trifling as too often to attract but little of the patient's attention. Perhaps he applies to his physician on account of slight *diarrhæa*, supposed to be the result of error in diet; medicine affords some relief, and he proceeds in his ordinary occupation for days, and when the action is more chronic, for weeks, though under great depression of the mental and coporeal energies; till at length, his altered appearance, hacking cough, permanently dry skin, invincibly rough furred tongue, and morbid taste, attract some more serious notice on his own part, or that of his family. The real nature of the disease may still remain a secret to both patient and physician; and it may not be till a marked succession of rigors, or profuse and clammy perspiration announce in audible terms the

formation of abscess, that either party becomes awake to the actual danger. A sense of uneasy feeling may or may not exist in the region of the liver, according as the disease is centred more or less deep in its substance, or in its upper convex surface; when the former exists, the symptoms are more than usually obscure and insidious: in the latter case they are very acute."

"When on the other hand, the left lobe is the seat of morbid action, it is easy of detection to a physician, though not so to the patient."

"I should say that diarrhœa, followed by slight fever; the peculiar state of the skin; the tongue having the roughness of a coarse file; with adherent coating, together with the local uneasiness already described; cough and high-coloured urine, ought immediately to warn the physician of the suppurative inflammation which leads to liver abscess. The diagnosis will receive material assistance from the external examination of the chest, especially when the upper convex surface of the liver is the seat of disease."

"Such are the symptoms and most uniform succession of events: they should always meet with the strictest attention, and the most prompt and decided treatment."

"I will give a case in illustration. Last cold season a medical friend called at my house, and just as he was quitting, he said, incidentally, that he had a 'pain in *his back*, like lumbago.' On examination, I found his liver seriously involved in disease, and that it had been so for three days, during which he had been going about as usual, living in his ordinary manner, and using the *cold* bath daily. All he had noticed was a slight shivering three nights previously, followed by feverishness and pain of the back; but he considered his symptoms of so little moment that his mention of them was obtained only through interrogation."

"He was young and robust of habit, so that with the loss of about eighty ounces of blood within twenty-four hours, his symptoms yielded:—but I think he recovered with difficulty: a few hours more, and it would have been too late. The above is an extreme case of the kind, the inflammation having been of a very acute character; but it is important, as shewing how very insidious are the symptoms, and how little they possess of the urgency to cause a salutary alarm in the patient's mind. It is always thus when the inflammation is centred in the parenchymatous structure of the liver; and hence the absence of acute pain, and those urgent symptoms which characterize inflammatory states of the peritoneal covering of the gland, which always give ample warning."

"However long the disease may have existed, provided there be no symptoms of suppuration, general bleeding, copious in relation to age, health, and length of residence in India, must be instantly had recourse to, and the measure of depletion should be the sense of general relief, *with softening of the skin*. These are the only safe criterions of adequate loss of blood, and it should be continually held in recollection, that suppurative inflammation of the most deadly character is present, and that consequently there is no time to be lost. After the bleeding, calomel and antimony should be exhibited every four hours, with occasional smart purgatives in the intervals, until the system is brought mildly under the influence of mercury: leeches and blisters are of course useful, but the latter ought not to be applied till a powerful impression has been made on the disease. The diet, during the progress of treatment, and for a long time after, should be of the very sparest, such as thin sago or arrow-root. On a plan of cure such as this, I have seen cases of a very unpromising appearance end in health. Occasionally this has been finally effected by the steady use of the nitro-muriatic acid bath, persisted in for a month or six weeks. One error seems very general respecting this disease, namely, its supposed infrequency in Bengal; but so much am I satisfied of the contrary that, taking the idiopathic cases of it, and those that form the complications with, or sequelæ to fevers and

dysentery, the sum total would form a respectable item in our bills of mortality : indeed the statistical tables furnished in this work prove it."

The last article is on Neuralgia.

"Neuralgic affections, and especially the *tic douloureux*, prevail endemically in Bengal. We have here 'the true tic'—a terrible disease, that strikes with the violence and suddenness of lightning—the torture of which no language can describe."

"In such a disease no man can remain an unconcerned spectator; and with all our sympathies aroused, we have often to regret the inertness of remedies the most powerful in repute, such as tonics of all kinds, occasional purgatives, as general measures, and veratria, ice, and acupuncture, as local means."

"Dr. Elliotson assures us that he has never seen one case of neuralgia referrible to disorder of the digestive organs, and it may be so in England; but I must say that, till my attention was drawn forcibly to this subject by Sir Charles Bell, I had no great reason to congratulate myself on my success against the tic of Bengal."

Mr. Martin, after quoting Sir Charles Bell, goes on to state his belief that disorder of the digestive organs is, in Bengal at least, one of frequent influence.

"That such is a common source in the neuralgic affections of this climate, there can be no doubt; and acting on that impression, I have cured a great number of cases of the severest forms (*tic* especially) in which all other remedies, general and local, had failed. I allude to one case especially, that of a lady who had suffered for years, and used a variety of means under direction of the late Mr. Twining, who at last directed the removal of the teeth of the side affected; but which was not done. Her agony used to last for a fortnight together, so as nearly to deprive her of reason. The purgative plan pursued for two months removed the pain; and for three years she has had no return. I could add many similar cases to prove the general influence of intestinal irritation on the disease in question. No doubt cases may occasionally occur, where the plan here recommended, and all others, will fail of doing good; but such should not discourage us. I have succeeded by combining the purgative and tonic plans: indeed the first, pursued in the moderate way stated, interferes with no other measures of cure."

In the above analysis we have avoided all comments, not considering ourselves justified in questioning any of the opinions and practices of a gentleman, whose talents and opportunities are entitled to so much respect. The materials of this report are, indeed, so valuable, that the senior Editor has added them to a new edition of his work on Tropical Climates, now in the press. This fact speaks for itself. But we cannot dismiss the "REPORT," without alluding to a circumstance which must have been highly gratifying to its author, and which, indeed, is creditable to the medical profession in India, as it shews the estimation in which it is there held by the public at large.

In January, 1840, Mr. Martin, after a long residence in India, determined to husband out what health was spared, by a return to his native climate, and he is now settled in this metropolis, where we are sure many of his old Bengal friends and patients will find him out. The following extract from the *Calcutta Courier*, of January 15, 1840, will shew the estimation in which Mr. Martin was held by the inhabitants of that great Presidency.

"We are informed that the friends and patients of J. R. Martin, Esq., Pre-

sidency Surgeon, have determined to present to him on the occasion of his approaching departure from India a testimonial, expressive of the sentiments of regard and esteem which they entertain for his character. A preliminary meeting was held about three weeks ago at the Chambers of the Hon. Sir John Grant, when the subject was talked over, and it was resolved that a book should be circulated among Dr. Martin's patients now resident in Calcutta, for the purpose of affording them the opportunity of subscribing to the proposed testimonial. Nearly one hundred gentlemen have entered their names; and a meeting was held yesterday afternoon at the Town Hall, in order to consider and decide in what manner the sum subscribed, which is very handsome, should be appropriated so as best to accomplish the object of the subscribers. Sir John Grant was called to the Chair, and in his usual succinct and appropriate style explained the purpose of the meeting. The following resolutions were then proposed and unanimously sustained:—

1. Moved by J. F. Leith, Esq. and seconded by Colonel Taylor, that the amount of the Subscriptions be remitted to Messrs. Rundle and Bridge of London, subject to the order of Sir Charles D'Oyley, Bart., James Young, Esq. and J. A. Dorin, Esq. and any two of them, and that these gentlemen or any two of them be requested to put themselves in communication with Dr. Martin, and to order from the said Messrs. Rundle and Bridge, such a piece or service of plate as they or any two of them may determine upon in communication with Dr. M. to the value of the amount remitted.

2. Moved by J. Allan, Esq. and seconded by G. Henderson, Esq. that the money be forthwith collected on Mr. Leith's receipt as Honorary Secretary, and that the amount be invested in the purchase of Treasury Bill or Bills payable to Messrs. Rundle and Bridge.

3. Moved by the Rev. W. H. Meiklejohn and seconded by C. W. Smith, Esq., that a letter be presented to Dr. Martin expressive of the regard and esteem of his patients, to be signed by the Hon. Sir John Peter Grant as chairman of this meeting, and to have the names of the subscribers to the testimonial appended to it; and that the Hon. Sir J. P. Grant be requested to write the letter.

These resolutions having been carried unanimously, it was agreed that a deputation wait on Dr. Martin, to present the letter, and that it be composed of the following gentlemen:—

The Honorable Sir J. P. GRANT,
Colonel TAYLOR
The Rev. Dr. CHARLES,
C. W. SMITH, Esq.
J. ALLAN, Esq. and
J. F. LEITH, Esq. *Hon. Secretary.*

and that the Secretary do write to Dr. M. to request him to fix an hour on Saturday next for receiving the deputation.

Thanks were then voted to Sir J. P. Grant for his kindness in presiding and for his conduct in the chair, and the meeting separated.

We beg to tender our cordial congratulations to Dr. Martin on his receiving such a flattering testimony of regard for his personal character, and esteem for his professional services. We should have been sorry, indeed, if a gentleman, who is so exemplary in all the relations of life, and who has long stood in the first rank of his profession, had been permitted to leave the scene of his labours, without having been furnished with some mark of the esteem in which he is held. It is not in India as elsewhere. From the perpetually shifting character of the European portion of the population, all that any man, however distinguished in his profession, can hope to enjoy is contemporaneous reputation; for a more lasting fame falls to the lot of those alone—how few they are!—whose names are linked to some valuable improvement in the financial administration of the country, or who have covered themselves with glory in the battle-field, and by

their martial achievements have added to the territorial possessions of the British Crown. Dr. Martin has, in his own walk, earned for himself a reputation, of which one might be proud. His sterling integrity of character, his gentleman-like propriety of conduct, his careful avoidance of professional bickerings, and his zealous devotion to the duties of his profession have been fully appreciated by his fellow-citizens; and we rejoice that he is to carry with him such a substantial token of the sentiments with which he is regarded by them. We sincerely hope that his projected voyage to Europe will contribute to the restoration of his health, and he has our best wishes that, in the future scene of his professional exertions, he may meet with the success of which he is so eminently deserving."

TESTIMONIAL.

Dear Sir,

Calcutta. Jan 18th, 1840.

We, whose names are annexed to this letter, your friends and patients, while expressing our regret at losing the pleasure of your society and the benefits of your medical skill, and our still greater regret at your return to Great Britain being rendered necessary by the state of health, produced by your arduous services and your unremitting devotion to the duties of your profession, desire to present you with a lasting though inadequate memorial of our sincere regard for the excellencies of your personal character—our high estimate of your professional ability, and our gratitude for the benefit derived from its prompt, careful, and well-adapted exertion in the cases of ourselves and our friends.

We have for this purpose requested Sir Charles D'Oyley, Bart., James Young, Esq., and John Alexander Dorin, Esq., or any two of them who shall happen to be in London at the time of your arrival, to order a piece or pieces of plate to be made by Messrs. Rundell, Bridge, and Co. of London, of such description as you shall do us the favor to fix on, of the value of four hundred guineas, with a suitable inscription, of which we request your acceptance.

Signed by the Hon. Sir John Peter Grant, chairman of the meeting of the friends and patients of J. R. Martin, Esq. held at the Town Hall of Calcutta in January, 1840.

Signed in their name and by their appointment.

JOHN PETER GRANT.

Then follow upwards of a hundred names of gentlemen of Calcutta.



MEDICAL STATISTICS.

I. STATISTICAL REPORTS OF THE HEALTH OF THE NAVY, FOR THE YEARS 1830, 1831, 1832, 1833, 1834, 1835, and 1836, IN THE SOUTH AMERICAN, WEST INDIAN, NORTH AMERICAN, MEDITERRANEAN AND PENINSULA COMMANDS. Ordered by the House of Commons to be Printed. 1840.

[Concluding Notice.]

II. SECOND ANNUAL REPORT OF THE REGISTRAR GENERAL OF BIRTHS, DEATHS, AND MARRIAGES, IN ENGLAND, WITH APPENDICES.

OUR readers will do us the justice to admit, that we have encouraged, in every possible way, the publication of Statistical Reports. We have ever been convinced, and we still are so, of their utility, and, directly or indirectly, they will prove, we feel assured, the most powerful instrument we now possess for the advancement of our science.

It may be true that some enthusiasts push their application beyond its legitimate limits. But extravagance is always found to accompany the introduction of new means of eliciting truth, and cannot permanently derogate from their substantial value. It is the part of men of sense to accept all the good, and allow the evil, if such exist, to evaporate under the influence of reason and time. *They* may be trusted for setting these matters in their proper light, and establishing, at last, their real worth. We turn to the Reports before us.

1. HEALTH OF THE NAVY.

In our last Number, we *joined* our brave tars on the South American, West Indian, and North American Stations. We deferred to this occasion a trip with them to the Mediterranean. And who would not accompany *them there now?* Who would not sail with the gallant Napier, and encounter the Egyptian muskets and the Syrian dysentery, for the sake of such laurels as our blue-jackets have won for Old England at Beyroot, and Sidon, and Acre. Even while we landsmen

“Who lie at home at ease,”

are writing of the fevers and fluxes that may seize on them, our countrymen are, we grieve to say, struck down by them, and the cannon of Acre are less feared than they.

MEDITERRANEAN AND PENINSULAR COMMANDS.

Year 1830.—This command embraces the seas, and shores of the Mediterranean, and Gibraltar. It extends over less space than some other commands, comprises fewer degrees of latitude, and is less exposed to extreme difference in degrees of temperature; it does not include more than 12 de-

grees, those namely, from the 32d to the 44th north. As respects geographical position, therefore, the term "temperate" has been especially applied to it, and it has obtained high reputation for its influence on health. Yet the difference between the south and the north shores, as regards temperature, is often great, especially in winter; the vicissitudes on the north coast are sudden, and violent.

The sirocco, south-east wind, blowing from the African continent, is singularly depressing, suddenly producing such languor, oppression, and feelings of feebleness, as neither its temperature, nor other appreciable quality can account for. It seldom continues to blow during many consecutive days. Its influence is most felt near the coast of Africa, but it is often powerful at Malta and Sicily, and sometimes reaches the north shores of the Mediterranean.

Malta, on account of its central situation, its arsenals, and the excellence of its harbours, is the principal naval station. During nine months of the year, the temperature is moderate, the weather being generally clear and fine, which, with the excellence of fresh meat, and vegetables procured there, produces highly beneficial effects on the health, comfort, and efficiency of the naval force employed in the Mediterranean. The other three months are hot, sometimes in a high degree; yet it has rarely proved very prejudicial.

Every anchorage in the circuit of the mediterranean is visited, and more or less frequented by ships of war. The ports most resorted to are Malta, Smyrna, various Greek, and Levantine islands, and Gibraltar, the extent to which they are occupied differing much at different periods.

The numerous ports, and places, embraced by this command differ greatly as to extent, exposure, and physical structure, and considerable in regard to external heat; they therefore act very differently on the health of ships' companies resorting to them; but, on the whole, and apart from some rare, but severe, epidemics which have affected some of them, their influence, combined with that of the sea climate, is very favourable.

The naval force employed on the coasts of Spain, and Portugal, is included in the Report for the Mediterranean. From the frequent interchange of portions of the force of the two squadrons, ships passing from the Peninsula to the Mediterranean, and *vice versa*, it was found impossible to separate them, so as to show satisfactorily the power of each on health.

The mean number employed in the united squadrons during the year was 6,576.

The health of the naval force, during the year, was high. From all causes there were 59 deaths, being at the rate of considerably less than one dead out of every hundred men employed. In three instances death resulted from external injuries at sea: so that the rate of mortality from disease was 8.5 per 1,000; from all causes, nine per 1,000 of force, abroad. But seven invalids from the station died in home hospitals, making a total of 66 deaths on, and from, the station, which is in the ratio of 10 dead out of every 1,000 employed, both abroad and at home, during the year. Of the other fatal cases, 43 were on board, 16 in foreign hospitals.

The total number of cases treated was large, viz. 9,305, giving the very high ratio of 1415 per 1000 of force. Out of the total number, 319 were sent to hospitals for treatment, and 189 were invalided, 99 from ships, and

90 from hospitals; the invalided were in the ratio of 28·7 per 1,000 of force. Thus it appears, that, deducting from the total number of cases, 319 sent to hospital, 43 terminating in death, and 99 in invaliding, on board, 8,844 were treated successfully in the ships where they occurred.

Of all forms of idiopathic fever, and probably some symptomatic affections classed with them, there were 709 cases; of which 628 were continued, 34 remittent, and 47 intermittent: of the first, seven terminated in death; of the second, five; of the third, none; of the first, 23 were sent to hospital; of the third, two; of the second, none. Three of the 25 cases sent to hospital terminated fatally. The vessel that suffered most severely was the *Mastiff*, a small surveying vessel, five deaths from eleven attacks occurring in her, four from remittent, and one from continued fever. She was employed on the coast of Thessaly. The people, as must be in such service, were much exposed to the weather in open boats; it rained heavily at times, the mean temperature being 76°. In such circumstances, and being, it is presumed, on a marshy coast, remittent fever was to be expected.

There were 227 cases of inflammation of the lungs, and their investing membranes; of which 88 were sent to hospital, four terminated fatally at sea, and 25, in a chronic condition, were invalided. The number affected was large, the relative loss by death small.

Inflammation of the lungs, and of their membranes, especially the interior, lining the air-passages, is rather a prevalent form of diseased action in the Mediterranean, for which the nature of the climate, in regard to temperature particularly, sufficiently accounts. It is, as has been stated, very variable, the changes, especially on the north coast, being sudden, and often violent. When the wind shifts from south to north, and *vice versa*, a fall or rise of 20 degrees in the thermometer will sometimes take place in a few hours.

However strange it may appear, it has been ascertained that bronchitis, which originates in the Mediterranean, and which often runs rapidly to a fatal termination there, may be arrested by moving the subject to England. A similar remark was made respecting the disease in South America.

Of less violent, but more dangerous diseases affecting the pulmonic tissue, there were considerable numbers. The phthisical cases, including hæmorrhages from the lungs, amounted to 53, viz. 36 of the former, and 17 of the latter. The latter is not necessarily a symptom of the former, nor of disorganization so great as to destroy life, though it certainly is so in a great many instances. It is therefore remarkable that none of these 17 cases proved fatal. It is also remarkable, that out of 36 cases designated phthisis, only four terminated fatally abroad, and one in hospital at home, though 14 were sent to hospitals abroad, and seven were invalided. There were two fatal cases of chronic catarrh in home hospitals; whether these cases ought to have been originally, and correctly, designated phthisis or not, cannot be ascertained; but even if they were, the loss from phthisis, particularly in relation to the number affected, would be singularly low. It can scarcely be doubted, that the term has been in some cases erroneously applied, and that less fatal diseases, such as chronic bronchitis, or pleuritis, have been mistaken for true tubercular phthisis; but be that as it might, it is certain that the loss from pulmonic disease was very small, and that the station maintained its reputation during the year, as far as the experience of the squadron was concerned.

Under the appellation of inflammation of the liver there were 75 cases, of which 17 were sent to hospitals for treatment, three were invalided, and two terminated fatally.

From all the cases of inflammatory disease of the alimentary organs, there was only one fatal in its termination.

There were 3 cases of small-pox in the Blonde, and one in the Wasp, at Malta, where the disease was prevalent among the citizens. In the Blonde it was generally mild, the eruption having little tendency to confluence, and there being little secondary fever. No one terminated fatally. It is stated that the vaccine cicatrix was well-marked in all the crew, except six individuals, to whom the virus was immediately communicated. Besides these 35 cases, two were sent from the Asia to Malta hospital, both described as small-pox by the surgeon of the ship, and both fatal. One had, seemingly, had the small-pox previously, the other had apparently not been vaccinated.

The dysenteric cases amounted to 120; the most of them were slight, and easily cured. There were three fatal cases: three were sent to hospital, and one was invalided.

There were 145 cases of common cholera. Out of the whole number, one man died in his ship, the Blonde, and one was sent to hospital, the remaining 143 having recovered in their respective ships.

Though there were only four cases of delirium tremens, two terminated fatally.

Cases of venereal disease were numerous. There were 245 of syphilis, 291 of gonorrhœa and stricture, and 62 of bubo and swelled testicle. Though the last had not all a venereal origin, it is probable that the majority of them had. Glandular disease is common in the Mediterranean, and buboes frequently occur without any trace of a venereal cause.

The cases of common ulcer were also numerous, viz. 532; but they were all, except 11, sent to hospital for treatment, and four invalided, cured in the ships where they occurred.

The wounds, accidents, and external injuries of all kinds, amounted to the large number of 1,729 cases; of which 36 were sent to hospital for treatment, four were invalided, and three terminated fatally at sea. In a great majority of instances they were very slight, and speedily cured. Of the cases sent to hospital, three terminated fatally.

Such was the sickness, such the mortality, on this command, during the year 1830. We need not enter so much into details in the succeeding years, but rather content ourselves with indicating their differential characters. The chronicle of the first will have conveyed a good notion of the general salubrity or otherwise, of the Command.

Year 1831.—There was less death on the station than there was even in the preceding year, but there was considerably more in home hospitals, from disease contracted on it; so that the total mortality resulting from service, in the united squadrons, was a little more in 1831, than it was in 1830.

The mean numerical force of the year was less than that of the preceding year, being 5,714. The number of deaths during the two years 1830 and 1831, was the same, viz. 60. The ratio of mortality was, however, a little lower in the first than the last; in that it was, from all causes, on the station, and in home hospitals, at the rate of 10, in this it is at the rate of 12·3 per 1,000 of force.

During the year under consideration, there were 50 deaths, from all causes on the station, 31 of which were at sea, and 19 in hospitals, being in the ratio of 8.8 per 1,000 dead of the employed. But of these 50 deaths, 10 were from external injuries; so that the ratio of mortality from disease, on the station, was little more than seven per 1,000 of force. Of the invalids sent to home hospitals, 20 died, making a total of 70 deaths, from all causes, at home and abroad, being, as has been stated, in the ratio of 12.3 per 1,000; and from disease, separate from external injury, 10.5 per 1,000 dead of the employed. The points in which the two years principally differ are the greater mortality in home hospitals, and from external injuries in 1831, than in 1830. In 1830 there were only seven deaths in home hospitals, and six from external injuries; in 1831 there were 20 of the former and 10 of the latter. It often happens, however, when patients die in home hospitals from foreign stations, that death takes place the year after they were invalidated abroad, which, so far, would lead to erroneous conclusions respecting a single year. In determining the absolute mortality resulting from the disease of a foreign station, by adding to the deaths on it, those which occur in home hospitals, from it, it is therefore essential to take the result of a series of years, little precise information being deducible from those of one year.

The total number placed on the surgeons' list during the year amounted to 8,883, being at the rate—higher even than that of the preceding year—of 1554 per 1,000 of force. Of the total number, 411 were sent to foreign hospitals, where 19 terminated fatally. The number sent to, and the number which terminated fatally in, foreign hospitals, are higher, each by about one third, than in the preceding year, though the ratio of mortality on the station is lower. Sending seamen and marines to hospital is affected greatly by opportunities. When disease occurs far out at sea, or in harbours where there are no British hospitals, however severe or prevalent it may be, it must, of course, be treated to its termination on board.

Invaliding was resorted to in 163 instances, 80 on board, and 83 in foreign hospitals; the rate therefore at which numerical force was reduced through this medium was 23.5 per 1,000, being, within a very small fraction, the same as in the preceding year.

Thus, as 411 were sent to hospital for treatment, 80 were invalidated, and 31 died in ships, 8,361 were cured on board.

A rather curious account is given of fever on board the *Pallas*. She sailed in December 1830 from England, for the Mediterranean, touching at Lisbon, proceeding to Malta, thence to Salamis and Spezzia, and then returning to Malta; at each of these places she remained only a few days. She finally left Malta for England on the 2d of February, 1831, having embarked there 200 men of the 90th regiment, 41 women and children, and 15 invalids from the squadron. From the time she left England till her return, the weather had been generally fine, for winter; the range of the thermometer was small, the lowest noted being 57° , the mean 63° . When off Sardinia, on her return passage, fever appeared, on the 8th of February, and, before the 21st, had affected 100 persons, when it suddenly and entirely ceased. It attacked equally the men, boys and officers of the ship; it attacked, but less extensively, the soldiers and invalids; it did not attack the women or children. What was the cause of this disease?—why were the

women and children exempted from such a sudden and rapid epidemic, living as they did in the same place with those who were attacked by it? The wind, after leaving Malta, till the 8th, had been from the south and west, when it suddenly shifted to the east. The disease would appear to have been one of the few febrile disorders, prevailing epidemically, which owe their origin to a purely atmospheric cause, at sea. The reason why the people belonging to the ship suffered more than the male adult passengers, while the women and children escaped, probably depended on exposure, and the degree of it, to the direct influence of the wind. The ship's company, officers, men, and boys, were necessarily much on deck, while the soldiers and invalids were below, at least at night, where the women and children were almost constantly.

Idiopathic erysipelas, with tendency to gangrene, is not now, though it once was, a prevalent disease in the navy; it is therefore a striking feature in the mortality of this year in these commands, that nine deaths resulted from it, seven at sea, and two in hospitals. Of the seven deaths at sea, four were in the *Prince Regent*, out of 26 attacks. She had been employed a considerable time in the Tagus, where the disease prevailed rather extensively. Sometimes a slight scratch or contusion appeared to call into action the erysipelatous force with which the system was charged, or to open the way for the operation of the specific cause of the disease; at other times, or rather in other instances, the first local symptom was a small furuncular swelling, independent of external injury. There was perhaps a prevailing disposition to the disease, as well as a peculiar cause for it.

The other three fatal ship's cases were in the *Ganges*, out of eight attacks, which occurred in her at sea, on a passage from Malta to England, and happened, in fact, in the beginning of 1832, though the return is dated in 1831. They occurred nearly at the same time, and were strictly idiopathic, no external exciting cause appearing in any of them. For such an effect there was a peculiar, probably diffused cause in the ship; and that no more cases occurred would appear to have depended on the low state of susceptibility of the crew generally to the operation of that cause. What the cause of the disease is, and why, as sometimes happens, it shall prevail in one ship, and not touch another close to her, is a subject of interesting inquiry.

The ulcerative cases were in the ratio nearly of the preceding year, amounting to 549; of which 35 were sent to hospital for treatment, and four were invalided. Of the total number 137 were in the *Ganges*, 18 of which were sent to hospital. Most of them were in September, the hottest month of the year, in Malta harbour, the subjects being generally marines. The disease during that month, when 81 cases occurred, presented a very uniform appearance. It affected the feet, close to the toes or ankles, the first symptom being a livid spot, which did not extend beyond the size of a penny-piece, and to which extent the integuments sloughed. It is stated by the surgeon, that the disease was not contagious, but "depended on some peculiar state of cuticular irritability, superinduced by the condition and temperature of the atmosphere." It should perhaps have been added, that some morbid agent, some local atmosphere existed in the ship—her own peculiar product—which contributed to the origin, and continuance of the disease, if it did not alone cause it; for it is remarkable that, when cases

were sent to hospital, they speedily improved, the sores assuming a more healthy aspect within the first twenty-four hours. Besides, it does not appear that ulcer of the same kind prevailed in other ships at the same anchorage.

Year 1832.—While the ratio per 1,000 of mortality from all causes on the station was 8.8 in 1831, it is 10.1 of force in the present year; but the total mortality of the former is higher by a fraction, on account of a larger proportion of deaths in home hospitals, from disease originating on the station. Again, though the number of deaths from external injuries was, at sea, the same in the two years, viz. 10, the reduction of mortality from disease, on the station, was considerably less, by them (accidents) in 1832 than it was in 1831; in 1831 the ratio per 1,000 force of mortality, from disease abroad was little more than seven; in 1832 it was 8.5; the difference between the two years in this respect depending on difference in the number employed. Other differences in the details of the two years will be noticed afterwards.

The mean number employed during the present year was 6,634, being an increase of 920 on the active force of the preceding year. The total number of sick and hurt was 7,659, being in the ratio of 115.4 per 1,000 of the employed, while in the preceding year it was 155.4 per 1,000; making a reduction of a third nearly of sick and hurt in favour of the present year. Yet the total mortality of the two years, including the deaths in home hospitals, was almost exactly the same, and abroad considerably more in 1832 than in 1831; showing, with many like cases, how uncertain the relation between sickness and mortality often is.

Thus, it happens that a fever becomes suddenly epidemic on board ship, but scarcely, if at all, affects life, as happened in the *Pallas*, and other ships in the Mediterranean, in 1831. It also happens frequently when one disease prevails epidemically, that other diseased actions are suspended, or are less frequent, the master-malady, so to speak, having the power of resisting the attacks of other occasional diseases; and thus it happens that epidemics which have little destructive tendency, and are skilfully managed, though they prostrate great numbers, and create alarm, do not augment mortality. Even in severe epidemics, it is often matter of surprise, when they and the consternation which they caused are past, on comparing the total mortality resulting from them, and other diseases, with the mortality in equal periods when no such epidemic existed, the periods being considerable and the masses large to which the comparison is applied, that the increase of mortality during the epidemic period is so little as it is found to be.

Of the total number placed on the medical lists, 284 were sent to hospitals for treatment, and 147 were invalided; the proportion of both, especially of the first, was considerably less than in the preceding year. It was in the ratio of 42.9 per 1000 of force, whereas in 1831 the ratio of cases sent to hospital was 71.9 per 1,000; and while the ratio of invalided in 1831 was 28.5 per 1,000 of force, abroad, in 1832 it was 22.2 per 1,000,

There were 242 cases of inflammation of the lungs, and their investing membranes, of which nine, all at sea, ended fatally; 21 were sent to hospitals for treatment, and two in a chronic state, were invalided; there were two deaths at home. Of the total number of attacks, 55 were in the Cale-

donia, three of which terminated fatally. At the same time she had a great number (211) cases of catarrhal disease, many of them so severe as to approach the character of pulmonitis. All the cases occurred within eight months, the time between her arrival on the coast of Portugal and the close of the year. It is not easy to account for such a number of severe pulmonic affections in this ship—a ship of the line of the largest class. She was employed the greater part of the time in the Tagus, and off the coast of Portugal where the atmospheric heat was generally rather high, and steadily so; a number of cases occurred before she sailed from England. The lowest degree of heat noted in England was 41, the highest on the coast of Portugal 75; but between the extreme points there was a lapse of weeks, and it appears to have risen and fallen very gradually. It was, therefore, generally mild, and as uniform as it almost ever is in such latitudes. There were none of those sudden, and violent changes of weather, especially in respect of heat, to which pectoral inflammation generally, and it would appear reasonably, is ascribed. How, then, is this prevalent form of diseased action to be accounted for? It is stated by the surgeon of the *Caledonia* that no other ship on the station had such a large proportion of disease. It is further stated, that she was in a very damp state, from frequent washing of decks, to which he is disposed to attribute much of the pulmonic disease, as well as other forms of disease, particularly erysipelas. It appears that in June the practice of washing decks was less frequent than it had previously been, but the degree of diminution is not noted, nor whether it was increased, or lessened afterwards; the means are therefore imperfect for tracing the relation between washing decks, and disease. But, apart from this case, there is no reason to doubt that it is many ways, and often to great extent, prejudicial; for in addition to the sudden reduction of temperature resulting directly from it, when frequently applied, the decks are never dry, in the proper and healthy sense of the word, whatever means may be adopted for the purpose.

We look on this as a very interesting fact. The practice of excessive washing would really seem to be a most noxious one. We are confident that it has done, and is doing great mischief in our hospitals ashore. Contrast what occurred in the *Caledonia* with what happened in another ship on the same station.

The *Asia*, of 84 guns, was, at the same time, and during four previous months, employed in the Tagus, or near it, having had during the year only nine cases of pulmonic inflammation, and three of catarrh, all of which terminated favourably on board. As has been stated, the *Caledonia*, in the same position, and during eight months of the same year, had 55 cases of pulmonic inflammation, and 211 of catarrhal disease, so severe as to resemble fever complicated with pneumonia. It may be further stated, that, on comparing the general results of disease in the two ships, during the periods specified, while 12 were sent to hospital and four invalided from the *Asia*, 38 were sent to hospital and 16 invalided from the *Caledonia*; and that there was only one fatal case in the former, while there were eight in the latter ship.

Eight deaths in as many months in a ship having the complement of the *Caledonia*, do not certainly make a serious loss of life, being in the ratio of little more than one and a quarter per cent, per annum of the employed,

but it is large by comparison with the loss sustained in the Asia. The comparison between the number of pulmonic attacks in the two ships is still more striking, and in this point lies the chief interest; for to difference in some thing, or things within the two ships, as it regards the number affected, must the difference be traced. It may be fairly presumed that the cause of difference in these cases should be sought for in the different means of cleaning, and ventilating adopted, though in many cases the component parts of the ships themselves should enter largely into the account. It is unnecessary to point to the important uses derivable from such an inquiry, or to assert, if strictly carried out and acted on, that it would conduce greatly to increase of health.

In the Caledonia, again, there were 74 cases of ulcer, but all of them, with one exception, were cured on board. There the ulcerative process was, perhaps, associated with the erysipelatous, which had some prevalence in her; there is sometimes identity in cause, with considerable difference in modes of development.

Year 1833.—The mortality of this year is more than that of the three preceding ones, though the increase on the first is inconsiderable, and on the two following, in which it was the same, trifling. In the year under notice, from all causes, and including the deaths, in home hospitals, from disease manifesting itself within the limits of the commands, it was in the ratio of 13 per 1,000 of force. From all causes on the stations it was in the ratio of 10.5 per 1,000 of force; and from disease on the foreign stations, separate from external cause of death, the ratio of mortality was under nine per 1,000 of active force. This, when it is considered that malignant cholera was added to the ordinary causes affecting life, and that it occasioned a considerable portion of the total loss, is a very low rate of mortality, and goes far, in connexion with preceding Reports, to show that the climate of the Mediterranean, and of the adjacent sea and harbours, is generally, and apart from occasional rare epidemics, highly favourable to the health of sailors.

The force of the united squadrons in the Mediterranean, and on the coasts of Portugal and Spain, in 1833, was large, comprising 51 vessels of all descriptions, eight of which were ships of the line, three of them three-deckers; the number of men and officers employed being 7,836.

The total number of sick and hurt was 10,274, being in the ratio of 1,311 per 1000 placed on the medical lists, of the employed. This ratio is certainly not low in itself, but it is worthy of remark, that it is considerably lower than it was in 1830 and 1831, though that of mortality is higher.

We turn to some particular facts.

Of the whole number, viz. 299 cases, of remittent fever, a very large proportion, 243, were in Asia. The disease prevailed principally between April and September, the ship being at anchor in the Tagus. It was, in most cases, not violent in impression, and short in duration, seldom lasting more than four days; only one case terminated in death. The surgeon believes that it had a miasmatic origin, derived from contagious coast. Forty-two of the 66 remaining cases of this form of fever occurred in the Donegal. She also was in the Tagus, and in her, as in the Asia, the dis-

case was generally not violent, and of short duration. In both cases the surgeons are disposed to attribute the fevers to some modification of the agency which, at the same time, occasioned cholera in some of the ships, and at Lisbon, in which city it destroyed a large number in a short time. This conclusion seems to have been drawn chiefly from the circumstance of the alimentary mucous lining being in an irritable state, with frequent evacuations, sometimes resembling those in cholera.

This looks like those attacks of diarrhœa which obtained so much in London during the prevalence of cholera, and which in a very large proportion of cases ushered that complaint in.

There were 26 cases of small-pox in the Caledonia, while anchored in the Tagus, one of which terminated fatally. The surgeon expresses himself satisfied as to the disease being true variola, but does not give any opinion respecting its origin in the ship, nor any statement as to its being in Lisbon at the time. The first man affected had neither had small-pox, nor cow-pox previously, though an ineffective attempt to vaccinate him was made some time before. In two other persons, one of them an officer nearly 60 years of age, there seems to have been good evidence of their having had the disease in early life, and that in them therefore small-pox occurred twice. Most of the persons affected by the disease had been vaccinated, but the surgeon expresses doubt as to the real vaccine disease having, in all instances, been excited; and gives it as his opinion, that the appearance, manner of progress, and termination of small pox, in this instance, afford proof that vaccination, though it does not give absolute protection against small-pox, lessens violence, when it does not prevent attack, and confers a large measure of immunity. The subject of the fatal case had been vaccinated, but it does not appear how long before the attack of small-pox.

In a number of concurrent cases of fever, amounting to 20, and designated "synchus," one of which terminated fatally, having the general character of idiosyncratic fever, there appeared, though not in all of them, a copious pustular eruption—a symptom which the surgeon ascribes to the variolous infection prevalent in the ship, having the power of communicating this feature, and so far modifying the original disease. He expresses some doubt as to whether the fever in question was not a varioloid disease, and therefore dependent on the variolous atmosphere; but the severity of the febrile, and the slightness of the pustular symptoms, seem hostile to that opinion. The question is interesting; and it is remarkable, according to the opinions of the medical officers employed, that in the Tagus, and nearly at the same time, essential fever was greatly modified by the contemporaneous action of other morbid agents; by the cause of cholera in the Asia, and Donegal, and by that of small-pox in the Caledonia; those other independent agents having the power of communicating to the essential fever some of their peculiar symptoms.

Cholera, of the malignant kind, prevailed. There were 76 cases treated, 19 of which, in the Malabar, were the results of common atmospheric, and dietetic causes, and require no remark. Out of the 57 remaining cases, 17 terminated fatally; they were in the Asia, Donegal, Stag, St. Vincent, Talavera, and Revenge. After some details, we find it stated:—

What the cause of this formidable disease may have been, here and else-

where, this is not the place to inquire, even if it could be done with the prospect of arriving at a satisfactory conclusion. It may be admitted, however, to observe, that whencesoever derived, and wherever operating, it is essentially one and the same; and that in the case under consideration it was derived from the shore, whence it was carried, through the medium of the atmosphere, to the ships. It may be further stated, that there was no evidence of the disease being propagated by personal contagion.

Year 1834.—The ratio of mortality was lower in 1834 than in any of the preceding four years, except the first of the series, 1830; that is calculating all cases of death, whether resulting from external injuries, or disease; for deducting the former, which were less in 1830 than in 1834, the mortality was considerably lower in the latter than in the former.

The near approach to uniformity in the rate of mortality in these commands is striking. In a series of many years it will be found to vary very inconsiderably; the greatest difference between any of the five years examined is three per 1,000 of force, the lowest being 10 per 1,000 in 1830, the highest 13 per 1,000 in 1833. The reason why the difference is so slight is, of course, the rare eruption of destructive epidemics. On such stations as Jamaica, and the West Coast of Africa, the difference between two years, one immediately succeeding the other, is frequently great, the rate of mortality not exceeding that of the Mediterranean in one of them, quadrupling it or more, in the other. Even the outbreaking of a new and highly fatal form of disease, when limited to a section of the force, and not prevailing extensively there, as happened at Lisbon in 1833, does not always much augment mortality, its effects being apparently countervailed by immunity from other and ordinary causes of death. Thus, in the year just named, the ratio of mortality was higher by a fraction only, than in the two antecedent years, when the cholera in question did not exist; though a fourth part of the total mortality by disease on the station, in that year (1833) was occasioned by it. In the West Indies, and Western Africa, it is often far otherwise, from the operation of endemic fevers, the ordinary, and often evolved products of the places in which they show themselves.

The ratio of the total mortality of the year, including the deaths in home hospitals of patients received from the foreign stations, was 11.1 per 1,000 of the mean number employed, 97 deaths from all causes, in and from the squadrons, having occurred. But 17 of these were in home hospitals; so that there were 80 deaths from all causes, on the foreign stations, being in the ratio of 9.1 per 1,000 mortality of force. Of these 80 deaths abroad, 23 resulted from external injuries, and accidents, reducing the number of deaths, by disease, on the stations, to 57, and giving the very low proportion of 6.6 per 1,000 of force dead by disease during the year, within the limits of the Commands.

The mean number of men and officers employed during the year, was 8,745, being an increase of 909 on that of the preceding year. The total number of sick and injured was 11,303, being in the ratio of 1,302.8 per 1,000 of the employed. This ratio is nearly the same as the corresponding one of 1833; the proportion of injuries was, however, larger in the present year than the last, rendering the proportion of disease less, and reducing the ratio of sick to about one in the 100 of the employed.

There were 27 cases of small-pox, three of which terminated fatally. In the Asia there were 18 attacks, and two deaths. She was at anchor in the Tagus during the continuance of the disease, which was nearly four months. The surgeon states that it was generally slight, in some causing scarce any febrile disturbance; and that all those affected had been vaccinated, but at what previous period does not appear. The appearance, progress and power of small-pox in this instance, do not tend to lessen the obscurity which involves the important question—to what extent vaccination has the power of preventing or mitigating attacks of that disease.

In the Tyne there was one death out of eight attacks. The first case occurred in the person of one of the lieutenants, soon after his return from an excursion to part of Egypt, while the ship was at anchor on the coast. He was not aware of having been exposed to the disease during his absence; he had been vaccinated, and got over the attack easily. In six other cases the disease was not severe; in one it was confluent, and proved fatal. The last case was the only one in the ship, where there was not evidence of previous vaccination, or small-pox. The origin of the disease cannot be traced; but it is satisfactory to know that the fatal case occurred in a person who had not been vaccinated, while others who were more slightly affected, had undergone that operation.

Year 1835.—The ratio of total mortality, resulting from service, in the Mediterranean, and on the shores of the contiguous Peninsula, differs in a very slight degree from that of preceding years, taking the deaths from all causes, and whether occurring on the foreign stations, or in the persons of patients sent thence to home hospitals. We shall notice a few facts.

In the Barham there were 34 cases, designated typhus fever. The disease made its appearance soon after anchoring in the Bosphorous, close to the Valley of the Sultan, which is represented as abounding in fever exciting miasmata, and to which the fever in the Barham is ascribed by the surgeon. Up till the period of her anchoring there, she was free from fever. In such circumstances typhus was not to be apprehended, nor is it usual to apply the term to fever derived from such a source; remittent fever, though perhaps without well-marked periods, and with congestive symptoms, was to be apprehended. Two out of the 34 cases proved fatal.

In the Tweed there were 13 cases of fever, designated "mixed," four of which terminated fatally. The ship left Lisbon on the 1st of August, and did not return from the west coast of Africa till the 24th of October, during which time the fever, with its fatal results, broke out and terminated. During her service on the African coast, she anchored a week off the Rio Gambia, for the purpose of procuring wood and water—an employment always attended with danger on such a coast. In this instance the ship's company were not so employed, the work being done by Kroomen; but mere proximity to the shore was sufficient apparently for the production of the disease. A few days after leaving the anchorage, fever made its appearance on board. It did not extend far, but had a severe character, and occasioned a large proportionate loss of life.

Rheumatism was common, and often extremely intractable. It is a curious fact, not generally known, being at variance with commonly received opinions, that rheumatic affections, which obstinately resist treatment in the

Mediterranean, and other places of similar climate, often get rapidly well in England. During the year, 470 cases of the disease were treated; of which 15 were invalided, being two-thirds of all the invalided of this order of disease, "inflammation with fever."

Altogether from diseases of the lungs, acute and chronic, there were 37 deaths, making a large proportion of the mortality of the year, the total number dead, by disease, being 89.

These and similar facts which have been formerly stated, do not furnish a flattering account of the influence of the Mediterranean in pulmonic disease, either in a preventive, or curative point of view, comparatively, at least, with other naval stations; yet it has been and still is the practice, in recommending a foreign residence to consumptive patients, to give the preference to the shores of that sea.

Under the head of "ulcer," 499 cases were reported; of which 31 were sent to hospital, and seven invalided from ships. Generally the disease was mild and tractable, the ulcerative process having little force, and loss of substance being inconsiderable. The Caledonia again suffered the most, having had 103 cases, seven of which were sent to hospital, and one was invalided. In her there was prevailing tendency to erysipelas, with which the ulcerative action was associated. A similar tendency existed in the ship last year, and during several preceding years; and it is therefore probable, to whatever common causes the crew might be exposed, that there was some peculiar agency in the ship herself causing that tendency.

Year 1836.—The ratio of mortality, in the joint squadrons, in the six successive years which have been enumerated, was low, the highest, that of 1833, being no more than 13 per 1,000 of the active force, the result of disease and injuries, not only on the stations, but in home hospitals, in patients received from the Mediterranean, and Peninsular commands. During the year 1836, the ratio of mortality, from the same sources, and in the same places, was as low as 7.9 per 1,000 of the mean number employed, the total number dying on, and from the station being 89, viz. 76 abroad, and 13 at home. But of the total 89 deaths, 16 were from external injuries, reducing the mortality by disease to 73, which is in the ratio of 6.5 per 1,000 of mean strength. The rate of mortality, from all causes, on the stations, accidents as well as disease, was 6.7 per 1,000 of force, and from the latter, little more than 5 per 1,000. The results, whatever view may be taken, are highly satisfactory, the entire loss to the service being so small; if the mortality, from disease on the stations be looked at, separate from death by external injuries, and in the persons of invalids at home, it will appear strikingly low, only one death, to every 188 men employed, having occurred.

It has been observed that, during the six preceding years, the annual rates of mortality had differed very inconsiderably; and it was stated that, in such positions, rarely visited by severe epidemics, a pretty close approach to uniformity might be expected. This year forms an exception, difficult to account for; because, in that respect—immunity from any destructive epidemic—it had little advantage compared with the six preceding years. It is true that malignant cholera affected two, which, on account of a return being mislaid, was extended to three of them; but during the two last, 1834 and 1835,

only five deaths resulted from the disease, two in the former and three in the latter ; to account for different rates of mortality, these numbers would avail little. Even in 1833, when there were 17 deaths from cholera, the ratio of mortality scarcely rose above that of other years, when no such disease existed.

The causes of such difference, in such circumstances, were no doubt traceable, could all the ordinary agents called non-naturals, injuriously applied, producing, and aggravating disease, be detected, and duly appreciated ; as they cannot, the necessity arises of considering it accidental. One of the sources of difference between the year in question, and the immediately preceding year, was the small proportionate loss from acute diseases of the lungs in this, compared with the former. The agencies producing that source were certainly not unimportant, nor accidental, as to their operation ; but why their operation was so much more powerful in the first, than in the last, does not appear. Another and principal source of difference was the much higher proportionate loss from external injuries in 1835, than in 1836 ; this was however accidental, in the proper sense of the word.

But though the rate of mortality was much lower in the present year, than in the six preceding years, the rate of sickness was not. It was indeed higher than in most of them ; it was higher considerably than in the immediately preceding one, the rate of mortality being lower by a third. The total number of sick and hurt during the year was 14,623, being in the ratio of 1292.3 per 1,000 of mean strength. The ratio per 1,000 of force, of cases sent to hospital, was 44.4, differing but little from any of the preceding years, except 1831, when it was 71.9. The ratio of invalided, like that of dead, though not in equal proportion, was the lowest of any of the seven years. It was, including the invalided in home hospitals, and on all accounts, chronic disease, debility, age, and effects of injuries, 21.6 per 1,000 of strength ; so that the total loss to the squadrons, by invaliding, added to death, was under three in every hundred of the mean number employed. It does not follow that the loss to the service was so much ; for a number of the invalided, on the foreign stations, recovered health and strength at home, and would sooner or later return to it.

There were 36 cases of small-pox in the Hastings, at Lisbon, two of which terminated fatally. The surgeon's report, as to the powerfully modifying influence of vaccination, in this instance, is satisfactory. In one of the fatal cases, the subject had not been vaccinated ; in the other, though the operation had been performed, the cicatrix was indistinct ; in a severe, confluent case, there was no mark of vaccination ; while in all the instances, in which the scars were considered satisfactorily distinctive of effective vaccination, the disease (small-pox) was remarkably mild.

GENERAL RESULTS.

The Reporter passes to a general review of the condition of the naval force in the Mediterranean during the last seven years. He first presents a Table showing the total number of cases ; the number of all diseases and injuries, in classes ; the number of cases sent to hospital, invalided and dead ; with the ratio of each per 1,000 of mean strength.

" These figures," says he, " furnish a gratifying account of the health of the

naval force, in the Mediterranean, and on the shores of the adjacent peninsula, during the seven years to which they refer. They would no doubt be more satisfactory, if they embraced a longer period, as they ought, were it the object of the Report to exhibit, not only the state of health now enjoyed, but also to compare it closely with what it was in former distant times, and to show its progressive improvement. In order to obtain the latter objects, it would be necessary to go back at least fifty or sixty years, when, however, and indeed long afterwards, no documents were furnished, from which any thing like correct conclusions could be drawn. The total number dying might be pretty nearly ascertained, but the separate causes of death, at sea, and the sources of those causes, when traceable, must be mere guess-work. Were it possible to institute an accurate comparison between the health of the Navy, as it then was, and now is, the difference in favor of the present condition would be found immense, and render it more striking even than it is. As to the rate of improvement through a long series of years, it would not be found at all steadily progressive; it would rather be found to have made great advances at certain well-marked periods. One, and the most remarkable, of the advances in improvement took place about the close of the last century, and soon after the time when among other advantages conceded to the fleet, the system of victualing was placed on a fixed and sufficient footing; when the nominal became the real ration of the sailor, and the fraud and iniquity perpetrated under the cover of *pursers' weights* were abolished. From that period till the termination of war in 1815, the progress of improvement was not rapid. The health condition varied at different times and places, in connexion with the nature and localities of service, but no great change, pervading the whole can be traced. Peace however made many beneficial changes in the condition of the naval force, and with them came increase of health. Service was altogether voluntary, of short and defined duration, and free from many restrictions and privations which were necessary, at least in reference to impressed men, during war. Meat could be issued soon after it was salted, and biscuit after it was baked; and they were consequently more palatable and nutritious than they had been, though the same in quantity, in the latter years of the war. These and other changes, including the power of selecting seamen, the diminution of the allowance of spirits, and the issue of tea or coffee instead, have raised health to its present high standard."

The average annual rate of mortality, during these seven years, was 11.1 per 1,000 of active force, the total number dying, on the stations, and from them, being 617, the aggregate number employed, 55,709. Of the 617 fatal cases, 101 were from external violence, and 97 occurred in patients from the stations at home: so that no more than 419 deaths resulted from disease abroad. Deducting the deaths from external causes, the mortality by disease on the stations, and from them, in home hospitals, averaged 9.3 per 1,000 per annum; and taking the deaths on the stations, resulting from disease, and independent of violence, the annual rate of mortality was little more than 7 per 1,000 of the employed.

Low, however, as the rate of mortality is in these Commands, it is higher than in South America, where the average of the same seven years has been shown to be no more than 7.7 per 1,000 annually of active force, the effects of disease both on the station, and in home hospitals, from it, being on the station 6.5 per 1,000. Compared with the West Indian and North American Command, the mortality in these Commands, the effects of disease, is almost exactly half.

The average number of sick and hurt was 1304.6 per 1,000 per annum

of force; of sick separate from hurt, 1081·7 per 1,000. These averages differ very little from the corresponding ones in South America, where the sick and hurt averaged 1310·7, and the sick alone 1071·8 per 1,000, per annum of force; but it will be seen that the proportion of injuries was smallest in the Mediterranean, the total number treated being rather less, while that of sick was more than in South America.

The total loss sustained by the squadrons in the Mediterranean, and on the neighbouring coasts, from the number invalided, added to the number dead, averaged 36·9 per 1,000 of force annually, the mean annual rate of mortality being, from all causes, abroad and at home, 11·1, that of invaliding in the same terms, 25·8 per 1,000 of the number employed. It is remarkable that the entire loss sustained by the South American squadron, during the same time, was precisely the same, the larger proportion of invaliding there being exactly balanced by the greater mortality here; the average yearly mortality of the South American squadron was 8·9, of invaliding 28 per 1,000 of the employed.

The next Table shews the total number of cases; the number of all diseases and injuries in classes; the number invalided and dead; with the ratio of each per 1,000 of attacked.

The loss sustained by the squadrons during these seven years, from all forms of essential fever, was slight, the average mortality being under two per 1,000 annually of the employed. It was more, however, than in South America, where the mortality averaged only 1·3 per 1,000 per annum of the employed. In these Commands, though considerably greater than in South America, it is small in itself, and insignificant, when compared with the West Indies. There, though the ratio was much lowered, it may be assumed by a third at least, on account of the West Indian force being mixed up with the North American, the average annual mortality was 11·2 per 1,000 of the employed; it was therefore about six times as much as in the Mediterranean, nine times as much as in South America. But though the proportion of dead was higher in the Mediterranean than in South America, that of the affected was lower; the annual average of cases was 84 per 1,000 of force in the former, while it was 115 in the latter. In both instances, especially the latter, the disease in a great majority of cases had little force, and was frequently, there is little question, slight symptomatic rather than primary fever. The remark, though less generally, may be applied to disease designated fever in the West Indies; for while 264 died, 4,932 were treated there under that name.

The affections classed under the head of "organic diseases of the brain" amounted to 113 cases in seven years; of which 20 were sent to hospital, 12 were invalided, and 42 terminated fatally. They include acute inflammation, palsy, and apoplexy, but are composed chiefly of the two latter, which furnish all but one of the fatal, and all the invalided cases. The ratio of attacked, as well as of dead, is much higher than in South America, or the West Indies.

There were 1,742 cases of inflammation of the lungs, and their membranes and air-passages, exclusive of catarrh, and influenza; of which 249 were sent to hospital, 34 were invalided, and 54 terminated fatally. The annual rate of attacked averaged 31·3, of invalided 6, of dead 1, per 1,000 of force. In comparing these with the corresponding ratios in South

America, and the West Indies, it appears that they are all unfavorable to the Mediterranean, except that of invalided, in South America, for which want of hospitals there, independently of diseases' force, will satisfactorily account. Thus, in South America the average annual rate of attacked was 28, in the West Indies 22, per 1,000 of force; while the annual ratio of mortality was, in the former, 1 in 2,400, in the latter, 1 in 1,100, of the employed. The mortality from these diseases is strikingly low in South America.

Of all forms of hepatic disease, designated inflammatory, there were 403 cases; of which 62 were sent to hospital, 35 were invalided, and 12 terminated fatally. The annual ratio of the first is 7.2, of the second 1.1, of the third .5, of the last .2, per 1,000 of the employed. The infrequency of such disease in the Mediterranean is remarkable.

The loss by primary inflammation of the alimentary organs, including the stomach and bowels, with their membranes was very slight.

But, while these affections of the alimentary organs were less frequent and fatal, than in the other two commands, organic diseases of the pulmonic apparatus were much more frequent than in either, and, including primary inflammation, more fatal, especially when compared with South America. In the Mediterranean 285 cases were treated under the name of "phthisis;" of which 127 were sent to hospital, 70 were invalided, and 105 terminated fatally. These fatal terminations include the deaths not only on the stations, but in home hospitals, from them, the total resulting mortality, in fact; the same remark applies to all diseases in the seven years' summary; it may therefore be inferred that the term phthisis was not, in every one of the 285 cases, correctly applied. The average ratio of such cases was 5.1 per 1,000 per annum of force, while in South America it was 3.2, and in the West Indies 4.8. The annual ratio of invalided was 1.3 per 1,000 of force, while in South America it was little more than half; in the West Indies it was 2.4: why it was comparatively high there does not appear. The average ratio of dead was 1.9 per annum, being the same as in the West Indies, while in South America it was 1.5 per 1,000 of the employed.

In the year 1831 there were nine deaths from erysipelas, which have been placed in the Table of principal diseases, though, from the infrequency of the affection in a severe form, in the other commands it was omitted. During the other six years in this command, other fatal cases occurred, but not having a common source, and not appearing to possess essentially the same character, they are noticed among diseases which do not prove frequently fatal to seamen.

There were 742 cases of dysentery, of which 88 were sent to hospital, 16 were invalided, and 18 terminated in death; the ratio of attacked was 13.3 per 1,000 of invalided, and of dead 1 in 3,000 each per 1,000 annually of force. The ratio of attacked was a little more, of invalided half, and of dead the same, as in the West Indies. Comparing them with South America, that of attacked was little more than half, of invalided, and dead, not a third.

Venercal disease was frequent, no fewer than 4,222 cases of it having been treated, 2,771 of which were syphilitic, and 1,451 gonorrhœal. The average ratio of the first was 49.9, of the last 26 per 1,000 annually of

force; the temporary reduction of force by these forms of disease was therefore considerable. Compared with the West Indies, they were more numerous by a half, with South America by a third. But they were all, though so numerous, cured on the station, whereas 15 were invalided from the West Indies, and 13 from South America.

Rheumatism was not so prevalent as in the other two commands. The annual average ratio of attacks was 63.9 per 1,000 of force; in South America it was 72.3, in the West Indies and North America 69 per 1,000 annually of force.

But while rheumatism was less frequent than in the other two commands, and less severe than in the West Indian, especially as measured by the ratio of invaliding, the proportion of catarrhal cases was considerably greater here than in the West Indies and North America, much greater than in South America. Here the average ratio of attacks was 201.7 per 1000 annually of force: in the West Indies and North America it was 181.8, and in South America 137.8 per 1,000 annually of force. Out of the total number of cases, which in seven years amounted to 11,237, 12 terminated fatally; three cases in the West Indies, and one case in South America terminated fatally. The two diseases, rheumatism and catarrh, are attributed to similar atmospheric agency, in which the most notable property is reduction of temperature; and it is believed that the excitation of one, or other depends chiefly on the condition of the subject, as to degrees of susceptibility existing in different textures of the body. The opinion has prevailed during all ages, and is no doubt generally just; but it is no less true that there are often other, less evident, and little suspected, agents in operation, especially in the production of disease designated catarrh. In the cases under consideration, it appears, that while catarrh was much more prevalent in the Mediterranean than either in the West Indies or North America, or South America, especially the latter, rheumatism was less prevalent and much less detrimental particularly in comparison with the West Indies and North America.

INFLUENCE OF FORMS OF SHIPS ON HEALTH.

"As vague and conflicting opinions are entertained in the service respecting the comparative salubrity of different classes of ships, and as the subject is one of intrinsic interest, it is desirable to submit it to the test of numbers, so far as the peace constitution of squadrons will admit of its being settled. The question can only be tried in such commands as have a considerable number of ships of all classes: that was the case in no other than the Mediterranean, and on the Peninsular coasts, and to those the inquiry is necessarily confined. It was an object to make a distinct class of steam vessels, and their number being very small, till the year 1834, the comparison begins with that year, and is carried on through the two following, so that it embraces the total force of the joint squadrons, during three years, the aggregate numbers employed being 28,908."

Dr. Wilson admits that the time and the numbers are yet too limited for absolutely settling the question. Still an approximation to the truth is attainable.

For the object in view, all the ships and vessels employed have been divided into four classes.

The first class embraces all ships of the line, whether they have two, or three gun-decks; the second all frigate-built ships, whatever their tonnage, or weight of metal may be; the third all flush-decked vessels, sloops, brigs, schooners; they will be referred to as a class, under the general name of corvettes; and the last vessels of which steam is the principal propelling power.

There is much difference in the size of the vessels composing each of these classes, on the sanatory power of which, in connexion with the numerical force of their respective crews, it is not intended to enter here; but it may be stated, that the complements of ships of war are pretty closely adjusted to their sizes, to whatever class they may belong; and further, that difference in size, in the same class, does not appear to possess much influence on health. But in each of the classes, whatever be the size of the individual vessels, there is a peculiar form, giving a particular distinctive position to the places where the crews sleep, and eat, which may be presumed to act on health; at least, this is true—the particular position of the inhabited parts—of all the classes, except the two last, in which there are other circumstances which differ greatly, which are likely to have much influence, the power of which it is desirable to determine.

In the first class, composing ships of the line, the part of the ship occupied by the crew, at meals, and during sleep, has ports, and at least one deck between it and the holds, store-rooms, and wells; there is also a gun-deck over it, intermediate to it, and the upper deck. In frigate-built ships of whatever size, the inhabited deck is immediately over the holds, &c.; over it is the gun, or main-deck, and over that the upper or quarter, and fore-castle deck. The inhabited deck has no ports, and is deprived of those means of ventilation. Scuttles are cut in the sides for that purpose; but they are so close to the water, that they are available only in fine weather, at anchor. Corvettes, forming the third class, have no gun-deck, in the language of the service. Their guns are planted on the upper, flush, or weather deck, between which and the holds there is but a single deck, without ports, for the accommodation of the crew. In general form, the fourth class, that of steamers, is like the last, the inhabited part having the same relation to the holds, and the open air; but they have the addition of the steam apparatus, and, when at sea, augmented temperature, and evolution of steam.

Four Tables are given for the purpose of exhibiting the kind and the frequency of disease that obtained in vessels of seventy-two guns and upwards—in frigates—in corvettes—and in steamers.

The largest proportion of mortality resulted from service in frigates, the next in corvettes, the next in ships of the line, the smallest being in steamers. In the first, the annual rate of mortality on the average of three years, was 9, in the second 8.1, in the third 7.6, in the fourth 5.4, per 1,000 of the mean number employed. The ratios are deduced not only from deaths occurring on board, but also in hospitals abroad and at home, of patients sent from all the vessels composing the four classes. To arrive at correct conclusions, it was necessary to ascertain the results of disease, originating in each of the classes, in hospital; because there is great difference in the

number of patients sent thither, apart from the frequency and violence of disease, the difference depending partly on the will of commanding, and medical officers, but principally on the contingency of being at sea, or in harbours having hospitals. This is strongly exemplified by the relative numbers sent to hospital from the second, and fourth class—from frigates, and from steamers; being from the last, in a ratio three times as high, as in the first. Steamers, being almost always employed in making passages, and making them quickly, have frequent intercourse with hospital harbours, which, with inferior accommodation for sick on board, accounts for the large proportion thus disposed of. How far the frequent opportunities they have of sending their sick speedily to hospitals, may contribute to lower their ratio of mortality, cannot be determined; because it cannot be known to what extent the results of disease would have differed, if all the sick, or a great proportion of them, had been kept on board. But it may be presumed, considering the apparent advantages afforded by hospitals, that it would have been augmented in that case, in some degree, whatever the degree might have been. It will be seen, while their ratio of mortality was so low, their ratio of sick was much higher than that of frigates; it was the highest indeed of all the classes, except that of corvettes, than which it was very little lower. This, however, is a very uncertain measure of the force, and fatal tendency of disease.

The ratio of invalided did not, from the nature of things, differ so much as that of sent to hospital: yet the difference between all was considerable; between two, the first and last, great. In the first, the average ratio was 22.1, in the second 17.5, in the third 20.1, in the fourth 13, per 1,000 per annum of force. The remark as to the ratio of dead, applies equally to this; namely, that it is deduced from the total number invalided, whether on board, in foreign, or in home hospitals, from each of the classes. And it appears, that the two classes which had respectively the highest and lowest proportion of deaths—the frigates and steamers—had the lowest proportion of invaliding, though it was considerably less in the steamers, which had the lowest, than in the frigates, which had the highest mortality; while in ships of the line, which, after steamers, had the lowest proportion of deaths, the rate of invaliding was the highest, nearly doubling that of steamers. Part of the difference in these results—the want of proportion between the number sick, sent to hospital, invalided, and dead, though the second should scarce be enumerated—may be the effect of contingent, not permanently operating causes in the respective classes; and it probably is so.

Essential Fever.—The ratio of attacks did not differ materially in the different classes, the lowest being 65.4, the highest 76.8 per 1,000 annually of force; the first was in ships of the line, the last in frigates. But there was great difference in the rates of mortality, being double in one, and more than double in another, what it was in the other two. Thus, it was 1.1 in ships of the line and steamers, while it was 2.2 in frigates, and 2.7 in corvettes, per 1,000 annually of force. As respects attacks, the steamers had nearly as large a proportion as frigates, in which the mortality was double, and a larger proportion than corvettes, in which the mortality was more than double.

.. On the other hand, the steamer class suffered more from primary inflam-

mation than any of the other classes. By death, their loss was in the ratio of 2.2 per 1,000 annually of force: in ships of the line and frigates, it was 1.8 each; and in corvettes, it was 1.2. By invaliding, the loss of the steamers was 8.7, while in ships of the line it was 4.9, in frigates 6.4, and in corvettes 6.8, per 1,000 annually of force. The high heat alternating rapidly with comparatively severe cold, to which the crews of steam ships, particularly the engineers, are exposed, was probably the cause of, or, at least, would appear to account for, the greater force, and more intractable nature of inflammatory affections in this class. They were also more frequent in it, than in any of the other classes, except the third, in which the mortality from this class of disease was the lowest.

"In the hæmorrhagic class of diseases, which comprises phthisis and hæmoptysis, the discrepancy is surprising, and so great as to be irreconcilable with all that is known of those diseases. The frequency of recovery from phthisis, in the service, or, in other words, the comparatively low proportion of deaths to attacks, has more than once been adverted to; and it has been stated, that part, at least, of such apparently favourably results, might arise from occasional error in diagnosis, the term 'phthisis' being applied to affections which did not possess its real nature. This, looking at the high ratio of cured, in connexion with the obscurity of the primary symptoms, and the difficulty often encountered, in ascertaining the distinctive physical signs, at sea, may be safely asserted, without imputing want of care or intelligence to the medical officers. But though generally applicable to a certain extent, it cannot be supposed to operate more in one class of ships than in another; and the discrepancies between the various classes, in this respect, in this disease—the number attacked, and the ratio dead—appears unaccountable.

It is remarkable that the proportion of attacks increased, though not in a regular ratio, in the inverse order of the size of the different classes, so far as they are distinguished by size. Thus, in ships of the line it was 9.1, in frigates 16.6, in corvettes 18.6, in steamers 23.9 per 1,000 annually of force. The same remark applies to the numbers sent to hospital; the smallest proportion was from ships of the line, rising through the others, and being much greatest in steamers. It does not apply to invalided, the annual ratio being the same, viz. 3.2 per 1,000 of force from liners and corvettes, 2.6 from frigates, none being invalided from steamers. Comparing the number dead with the number attacked, and sent to hospital, in the various classes, with relation to the mean number employed, the order of things was reversed, the proportion of mortality being highest in the large, lowest in the small. Thus, in ships of the line it was annually 2.4, in frigates 2, in corvettes 1, in steamers 1.1, per 1,000 of force. It was low in them all, strikingly so in the two last, and rendered more striking in steamers, by the large proportion of cases reported in them. About two-thirds of all the cases comprised in this order of disease, the hæmorrhagic, are placed under the head of phthisis. The number in steamers amounted to 22; supposing, not two-thirds, but the half of them, to have been phthisical, how is the very small resulting loss, viz. one death out of the whole number, to be accounted for?—Does steam act curatively in such cases?"

II. BIRTHS, DEATHS, AND MARRIAGES IN ENGLAND.

We turn from the navy to the Second Annual report of the Registrar General for England. A document of no mean consequence and merit. For much of it is devoted directly and specifically to medical statistics and to

the improvement of medical science. The attention of the government of this country is beginning to be directed to this object, and it requires no gift of prophecy to foretell that both the legislature and the executive must extend more assistance to it, than has heretofore been given.

The Registrar compares the results of the last year's registration with those of the preceding one

The numbers registered in the year ending June 30, 1839, were—

Births	-	-	-	480,540
Deaths	-	-	-	331,007
Marriages	-	-	-	121,083

which, compared with the numbers for the preceding year, shew, for births an increase of 80,828; for deaths, a decrease of 4,949; for Marriages, an increase of 9,602.

The increase of the number of registered births is attributable to the success of the plan of registration. A registration of births has thus been effected for the second year of registration, approaching much nearer to a complete record of the whole number born, than was afforded by the registers of baptism for the 10 years ending 1830, the latest period at which we possess authentic returns with respect to such registers. The mean annual number of registered baptisms during that period was 375,349: and if it be assumed that the number of such registered baptisms has increased in the same ratio in which the population increased from 1820 to 1830, it will appear that the probable number registered in the parochial registers for the year ending June 30, 1839, will not have exceeded 460,000, a number less than that of the number of registered births for the same period by more than 20,000.

The Register ascribes the decrease of registered deaths to a really diminished mortality. He believes that that of the preceding year was above the average, owing to the inclemency of the winter in the beginning of the year 1838, and to some epidemics, the prevalence and severity of which appear to have subsequently declined.

The Registrar thinks that it is impossible, at present, to do more than approximate to a solution of the important question—What is the proportion of the mortality to the population of England and Wales? The only data for arriving at an estimate of the population for the year ending June 1839, are the returns of 1821 and 1831. Taking the enumerations then given,—adding the Scilly Isles, which were omitted in 1821,—adding for the army, navy, and other enumerated population, according to the statements prefixed to those returns, such proportions as may be assumed to have belonged at these periods respectively to England and Wales, the numbers will be as follows:—

1821	-	-	-	12,162,056
1831	-	-	-	14,055,562

These numbers include all who may be assumed to have incurred the risk of death within England and Wales at those periods, and whose deaths might have been registered. If an act similar to the present had then been in operation, all of whom were not included in adverting to those returns in my report of last year.

With these corrections, and on the assumption that the rate of increase since 1831 has been the same as from 1821 to 1831, the population of whom

the deaths might have been registered, may be estimated to have been nearly as follows, at the middle of each of the two first years of registration under the present law:—

	<i>Males.</i>	<i>Females.</i>	<i>Total.</i>
January 1, 1838,	7,612,967	7,828,768	15,441,735
January 1, 1839,	7,723,924	7,942,876	15,666,800

The deaths registered in the years of which the above-mentioned periods are the middle terms, were—

	<i>Males.</i>	<i>Females.</i>	<i>Total.</i>
Year ending June 30, 1838,	170,965	164,991	335,956
Year ending June 30, 1839,	169,112	161,895	331,007

Without correction for omissions, this would shew the mortality to have been as follows:—

	<i>Males.</i>	<i>Females.</i>	<i>Total.</i>
1837-38,	1 in 44·5	1 in 47·5	1 in 46·
1838-39,	1 in 45·7	1 in 49·	1 in 47·3

Mean of the 2 years, 1 in 45·1 1 in 48·2 1 in 46·6

Assuming that the population may be estimated as above, and that it is unnecessary to allow a greater correction than 2 per cent. for omissions in the registration of deaths, the mean mortality of the two sexes for those two years will have been about 1 in 46.

With the marriages of the people, or with their education, points discussed by the Registrar, we have no immediate business; nor need we therefore go into them. We may simply mention that in 15 English counties, and in North and South Wales, more than 40 per cent. of the men were unable to write their names; and in 19 English counties in the West Riding of Yorkshire and in Wales, more than half the women were similarly deficient. It deserves mention also, that there is a decided superiority with regard to education in the metropolis, as compared with the rest of England and Wales, and next to the metropolis in the north of England; and that the principal deficiency is in Lancashire, Bedfordshire, Monmouthshire and Wales.

In 4,858 marriages, the average age of marriage was for men about 27 years, for women 25 years and a few months.

The Registrar has made some essential alterations in his plan.

“In exhibiting,” says he, “abstracts of the number of deaths at different ages, for the year ending June 1839, I have adopted an arrangement different from that which was employed for the first year of registration ending June 30, 1838. Instead of exhibiting enumerations of deaths at every successive year of age, I have divided the periods at which death occurs in a manner more conducive to the attainment of those purposes for which such enumerations are made. I have divided the deaths in the first year into six periods; during the following four years I have shewn them for each separate year; and after that age for quinquennial periods. I will briefly state the reasons for this change.

With respect to the subdivision of the first year, it must be observed that more than a fifth of the whole number of deaths registered in the year ending June

30, 1838, namely 71,888 out of 323,956 are under one year of age; that the distinction of months at that early period will exhibit circumstances more important with respect to the expectation of life, than that of years at later periods; and that the expectation of life on the day of birth differs greatly from that of six, three, or even one month old. It appeared to me therefore, that such distinctions ought not to be overlooked; and that the abstract should be framed rather with reference to the ascertained ratios of mortality than to an equal division of the periods of age. After the first year the ratio of mortality rapidly declines; and this decrease is shown by the enumeration of deaths for each of the four following years."

"After the fifth year," he goes on to observe. "I have combined the ages in quinquennial periods, a system which after much consideration I deemed preferable to that adopted in the abstracts for the first year of registration, namely of stating the number of deaths at each successive year of age."

To the statement of deaths at each successive year, it might be objected that it was delusive and assumed an appearance of minute accuracy which was not founded on truth. This objection is not applicable to the reported ages of children. Their recent births are fresh in the recollection of their parents or guardians, and their age is stated with sufficient accuracy. But it is not so with respect to the ages of persons far advanced in life; many of whom, especially among the poorer classes, are ignorant of their exact age, and when they die leave no record which enables their surviving relatives to state their ages with precision. An evidence of the vagueness attending statements of age is 'the tendency to speak in round numbers' noticed in the preface to the abstract of the population for 1831, a tendency causing a great apparent excess of mortality in the decennary periods at 30 and upwards, and of which the following remarkable instances may be found in the abstract of ages published in the preface to the population abstract for 1831, extracted from Burial Registers in England and Wales for 18 years:—

Ages.		Ages.		Ages.		Ages.		Ages.	
29	26,630	39	23,778	49	23,689	59	25,782	69	33,038
30	32,027	40	33,513	50	33,527	60	43,273	70	53,953
31	22,501	41	20,989	51	20,911	61	26,084	71	32,162

Experience has shewn that this incorrectness also exists in the statements of ages in the registration of deaths, as will appear upon reference to the abstracts for the year ending June 30, 1838.

An abstract of deaths at every successive year of age is therefore confessedly incorrect; and in stating this I am stating a strong reason against its continuance; for by exhibiting such an abstract I should commit a fault which I deem it most important to avoid,—that of assuming the delusive appearance of more minute accuracy than actually exists. By combining the deaths at different ages, after the fifth year, in quinquennial divisions, not only are errors and irregularities materially diminished, but the abstracts are rendered in a form more useful, more conducive to the fulfilment of those practical objects for which such abstracts are principally compiled. The most important use of abstracts of deaths is their application to the construction of tables of mortality; which it must be remembered are constructed, not from enumerations of deaths alone, but from two series of facts,—the numbers living at different ages, and the numbers dying at the same ages, and the observed relation between those facts. This relation of the living to the dying is varying daily. But it is obvious that however complete might be the record of facts, complete beyond all conceivable possibility of attainment, these variations in the minuter portions of time would be too irregular for the safe deduction of any general laws; and that it is only by including large numbers of facts, and long portions of time, that we sur-

mount the difficulties which such casual irregularities create, and arrive at the ascertainment of any well-founded laws of mortality.

In the assignment of these periods, the quinquennial division is found to be recommended, both by its correspondence with the enumeration we already possess of the ages of the living, and by the authority of those who have already adopted it. The ages of the living in 1821 were enumerated for quinquennial periods up to the age of 20, and for decennial periods after that age. The numbers of the living at different ages were not enumerated in 1831. It is earnestly to be wished that such enumeration may be made in future, and for quinquennial periods beyond the age of 20; but it is needless to expect that an enumeration more minute than for quinquennial periods, for all above childhood, can be effected with success. If, therefore, the utmost to be expected with respect to the future enumeration of the living is, that it be given for quinquennial periods, it becomes advisable that the age at which persons have died should be given in a corresponding manner."

The extract is important, and we invite attention to the suggestions it contains.

The register remarks that the Carlisle table, the Swedish table, the Northampton table, the Montpellier table, and Deparcieux's table of annuities were all calculated upon these principles.

The Registrar proceeds to notice the most remarkable diversities exhibited by the Abstracts of the second year of Registration, with respect to different portions of the kingdom.

The most marked and serious difference is that which is observable between the mortality of rural districts and of large towns, as exemplified in the proportion of the deaths of children, and of persons dying at advanced ages. The mortality of children appears to have been greatest in towns; and among those towns respecting which he can exhibit separate returns, the greatest at Manchester, where it appears that out of every 1,000 deaths of males, 495 were children under three years of age. The mean deaths of children under three years, in Manchester and Salford and suburbs, were 475 out of 1,000 deaths. In Leeds and its suburbs, the proportion was 447; in Birmingham 410; in Liverpool and West Derby, 437; while in Dorsetshire and Wiltshire, it was 281; in Devonshire, 296; in the North Riding of Yorkshire, with Durham (except the mining parts,) and the northern part of the West Riding, 282; and in the northern part of Lancashire, Westmorland, Cumberland, and Northumberland (except the mining portion of the latter,) not more than 253. In the whole of England and Wales, the mean mortality under three years was 343 out of 1,000 deaths at all ages; and it is to be remarked that, notwithstanding the comparative unhealthiness of towns, the proportion in the metropolis is still less, namely, 338.

Equally remarkable are the contrasts exhibited by the towns and rural districts, with respect to the proportion of persons who appear to have died in old age. The proportion out of every 1,000 deaths, which have been at the age of 70 and upwards, has been in Manchester, only 53; in Liverpool, 60; in Leeds, 68; in Birmingham, 78; in the Metropolis, 99; while in the North Riding of Yorkshire, and the agricultural parts of Durham, it is 202; in Devonshire, 208; and in the North of Lancashire, Westmorland, Cumberland, and Northumberland, not less than 210. In

the whole of England and Wales, the proportion, out of 1,000 deaths occurring at 70 and upwards, was 140.

Great also are the differences exhibited by the mining districts and the agricultural districts which surround them, with respect to mortality, both in childhood and in advanced age.

In the mining parts of Staffordshire and Shropshire, the mean deaths in 1,000 at all ages under three years, were 462; at 70 and upwards, only 90. In the rest of Staffordshire, Shropshire, and Cheshire, the proportion under three years was 332; at 70 and upwards, 141. In the mining parts of Northumberland and Durham, the proportion of deaths under three years of age was 349; and of deaths at 70 and upwards, 150; while in the surrounding agricultural districts comprised in divisions 22 and 24, the proportions of deaths under three were only 282 and 252; and of deaths at 70 and upwards, 202 and 210.

In Manchester and Birmingham, the year ending June 1839 shews an increased mortality among children as compared with the preceding year; but in Manchester there appears to be a diminished mortality between the ages of 20 and 40, and between 55 and 75; in Liverpool, a diminished mortality between 30 and 50; and in Leeds, a diminished mortality between 25 and 50.

But the Abstracts of the first and second years of Registration shew very little difference either in the Metropolis, or in the whole of England and Wales.

We pass now to the Appendix, which consists of a Letter to the Registrar-General from Mr. William Farr. The zeal, the talents, and the accuracy of this gentleman need no eulogy from us, and we accordingly proceed at once to the facts which he has collected and communicates.

The Appendix contains:—

Mortality and Diseases of the Year 1838—Diseases of Males and Females—Diseases of Towns and of the Open Country—Influence of Climate—Influence of the Seasons—Progress of Epidemics—Statistical Nosology—Table of Mortality for the Metropolis, 1840, (reprinted from the Weekly Tables published at the General Register Office.)

Mr. Farr makes some remarks on the utility of Registration, in which we cordially concur. We proceed to—

MORTALITY AND DISEASES OF THE YEAR 1838.

The rate of mortality in 1838 was higher than in the latter half of the year 1837. Small-pox and typhus prevailed epidemically. The epidemics began in 1837, close upon the decline of influenza, and attained their acme early in the year 1838. The class of pulmonary diseases was much more fatal, so were the convulsions of young children, and the equally obscure maladies of old age. The rigorous weather, which set in early in January, exercised a decided influence upon several of these diseases; and was, with the epidemics, apparently the cause of the increased mortality.

The annual rate of mortality was —

Males.	Females.	Mean of the Two Sexes.
2.28	2.12	2.20 per cent.
or 1 in 44	1 in 47	1 in 45.

DISEASES OF MALES AND FEMALES.

The mortality of males was seven per cent. higher than the mortality of females; and it is well established that the mean duration of life in females is longer than in males. The tables exhibit the principal diseases which lead to this result; and show that, while the two sexes are concurrently exposed to the ravages of nearly all the causes of death, their degree of liability to death from particular maladies is very various. The discrepancies may be ascribed to two sets of causes; a difference of organization, and a dissimilarity of habits and occupations, involving different degrees of exposure to the accidents, hardships, and dangers of life. Deaths from child-birth and deaths from violence are examples; 2,811 women died in child-birth, while 8,359 males and only 3,358 females died violent deaths. The higher mortality, and the smaller number of males living, have been ascribed exclusively to intemperance, wars, excessive fatigue, and other external causes; but this ground is too narrow; for the differential mortality is greater in early childhood and before birth than in the more advanced ages, and one of its causes must be sought in the intimate structure and properties of the body.

34,221 males and 33,556 females died of the *epidemic class* of diseases; small-pox, measles, croup, thrush, diarrhœa, dysentery, cholera, and influenza, proved most fatal to males; hooping-cough to females. Typhus, scarlatina, and erysipelas, were scarcely more fatal to males than to females.

The annual mortality from the first class of diseases was 4.5 in 1,000 living; and half the amount, or 2.3 in 1,000, was occasioned by *small-pox* (1.0), and *typhus* (1.3); the former disease as well as hooping-cough, having been more fatal than in 1837, and the latter nearly the same; while measles, thrush, diarrhœa, dysentery, cholera, and ague had declined.

Diseases of the *nervous system* destroyed 49,704 persons; 26,047 by *convulsions*, 7,672 by *hydrocephalus* (water in the head.); and 2,178 by *cephalitis* (inflammation of the brain,) three common diseases of children.

Mr. Farr comments on the vagueness of the heads—Convulsions—Fits—Teething.

The diseases of the nervous system are 23 per cent. more fatal to males than females, the chief difference arising from the diseases which affect children. The mortality from *apoplexy* was—males 4.0, females 3.5 in 10,000; from *paralysis*—males 3.1, females 3.5, in 10,000; the proportion of deaths from these maladies having been reversed in the sexes. To *chorea* (St. Vitus's dance), the deaths of 4 males and 20 females were ascribed; to *delerium tremens*, the deaths of 167 males and 15 females; *tetanus* (lock-jaw), 100 males and 29 females. The proportion in tetanus is 34 males to 10 females; but it is rarely an idiopathic disease, and men are ex-

posed in almost a similar proportion to the injuries in which it originates. It will be observed that, to 10 females, 24 males died violent deaths.

Diseases of the *respiratory organs* produced 90,823 deaths, that is, a mortality of 6.0 in 1,000; while the annual mortality of the group in 1837 was 5.5 in 1,000, or 11 per cent. less. The mortality of *consumption* fell from 3.96 to 3.93 in 1,000; pneumonia, bronchitis, and pleurisy, rose from 6.93 to 1.38 (69 per cent.); asthma, from 2.5 to 3.8 (52 per cent.) 3.8 in 1,000 males, and 4.1 in 1,000 females, died of *consumption*; 11,691 males, and 9,488 females died of inflammatory affections of the throat, larynx air-tubes, lungs, and pleura. Consumption is 8 per cent. more fatal to females than to males. In point of fact, 27 $\frac{1}{2}$ per cent. of the total deaths were due to diseases of the respiratory organs, and 18 per cent. to consumption; namely, 16.0 per cent. of the deaths of males, and 19.2 of the deaths of females.

Mr. Farr apostrophises stays very vigorously.

"The higher mortality of English women by consumption may be ascribed partly to the in-door life which they lead, and partly to the compression, preventing the expansion of the chest, by costume. In both ways they are deprived of free draughts of vital air, and the altered blood deposits tuberculous matter with a fatal unnatural facility. *Thirty-one thousand and ninety* English women died in one year of the incurable malady! Will not this impressive fact induce persons of rank and influence to set their countrywomen right in the article of dress, and lead them to abandon a practice which disfigures the body, strangles the chest, produces nervous or other disorders, and has an unquestionable tendency to implant an incurable hectic malady in the frame? Girls have no more need of artificial bones and bandages than boys."

2,032 males, and 1,530 females, are registered as having died of diseases of the heart and blood-vessels; but this is below the true number. Aneurism destroyed three times as many males (88) as females (31), the proportion observed in 1837.

Diseases of the *digestive organs* (unlike diseases of the chest) were less fatal than in the latter half of 1837; the mortality having declined from 1.4 to 1.3 in 1,000, or, including thrush, diarrhoea, dysentery and cholera, from 2.07 to 1.59 in 1,000. The deaths attributed to *teething* increased; in this as in other respects, the heterogeneous cases under the head having a stricter affinity to diseases of the nervous system. *Stricture* of the intestinal tube is often caused by cancerous deposits, and hence affects more females than males. Fifty-one males and 117 females died of peritonitis, probably, in some instances puerperal peritonitis; 318 males and 189 females of herni. Exclusive of teething, 10,992 persons died of diseases of the stomach and bowels; 3 of diseases of the pancreas; 3,880 of diseases of the liver (including jaundice, 841); and 27 of diseases of the spleen. The 1,385 cases classed under "disease of the intestinal canal" comprised cases of chronic enteritis, gastritis, and dyspepsia, as well as some malignant diseases.

1,338 males, and 313 females, died of diseases of the urinary organs. The mortality of the former from stone and gravel was 4 in 100,000; of the latter, 0.5. The difference in the 7 heads is exaggerated by, but it cannot be exclusively attributed to mechanical causes.

2,811 mothers died in childbirth and miscarriage, or about 5 in 1,000 cases, while the proportion in 1837 was 4 in 1,000.

The mortality from rheumatism, and diseases of the bones, joints, cartilages, tendons, and muscles, remained 1·4 in 10,000.

The deaths from affections of the integumentary system were comparatively few. 82 males and 18 females died of fistula, the proportion having been the same as in diseases of the urinary organs. Add to the class the acute diseases from the epidemics, with specific inflammations of the skin, and the mortality will be 2·01 in 1,000; while with typhus, and the epidemic diseases which affect the mucous membrane, the diseases of the intestinal canal were 2·58 in 1,000. The mortality from the two groups was 4·6 in 1,000; lower than in 1837, and 30 per cent. less than the mortality (6·0) from diseases of the respiratory organs.

Diseases of uncertain seat proved fatal to 21,871 males and 22,361 females. They include diseases in which the part was faultily left unspecified in the register, such as "inflammation; or diseases which, like cancer, pervade several organs, and in which the distinction of parts is quite subordinate to the distinction in the essential nature of the morbid products. *Dropsy* was observed in 5,170 males, 7,172 females; *hæmorrhage* in 730 males, 488 females; *mortification* in 802 males, and 541 females; *malformations* in 93 males, 73 females.

Of *purpura* there died 27 females and 31 males. Under hydrocephalus, hydrothorax, ascites, ovarian dropsy, and dropsy, 22,423 deaths were registered; 10,734 males and 11,694 females.

Sudden deaths were cases in which inquests were held, but in which the causes of death were either not ascertained, or not intelligibly expressed. 3012 were registered; 1840 males and 1172 females. Sudden death is most frequently the result of internal hæmorrhage; but the subject is not and cannot be well understood, until *post mortem* examinations are more generally instituted in this country. Out of 10,000 males 6·5 died of sudden death or apoplexy, and 5·1 out of 10,000 females. With violent deaths, which are also generally sudden, the annual mortality of males was 18·1 in 10,000,—of females 9·6 in 10,000. Women have less chance of dying suddenly than men, in the proportion of 10 to 18.

12 per cent. of the deaths of females, and 10 per cent. of the deaths of males, were ascribed to *old age* and to natural decay.

The deaths of 125 males and 36 females were referred to *intemperance*. The difference in the proportion of the sexes is still greater in *delirium tremens*, sometimes designated drunkards' delirium; of which 167 males and 15 females died. 161 males and 46 females died of *gout*. The consumption of intoxicating liquors has increased faster than the population in the last 20 years; and the sale of spirits at a much more rapid rate than that of ale or wine, which can only be injurious when taken to excess. The average annual number of bushels of malt on which duty was paid in England was 25,834,345 in the 5 years 1820-4; 35,048,368 in 1834-8; in 1820-4 the quantity of wine returned annually for home consumption was 4,751,104 imperial gallons, in 1833-7 it was 6,461,886 gallons; in 1820-4, consumption duties were annually paid in England on 7,572,702 imperial gallons of proof spirits, which in 1834-8 had risen to 12,012,484 gallons; and the opium entered for home consumption rose in the same periods from

19,276 lbs. annually, to 33,482 lbs. The decennial rates of increase were for malt, 24; wine, 27; spirits, 39; opium, 53 per cent. For malt, the annual rate of increase was only 1·2 per cent. from 1810-4 to 1826-30; but the consumption rose rapidly under the Act to permit the sale of beer, and the annual rate of increase from 1827 to 1836 was 3·3 per cent. The consumption of wines rose from 4,681,357 gallons (1820-3) to 6,617,363 annually in 1824-8, when the duty was reduced from 9s. 1½d. to 4s. 9½d. a gallon. It then remained nearly stationary.

The 63 cases ascribed to starvation in 1837 have been since carefully investigated. 24 were infants that died for want of maternal nourishment; 12 died of inanition; 12 died from exposure to cold; 15 from the want of proper food, or from the want of the necessaries of life. The coroners were not the informants in the majority of instances. In 1838, the deaths of 126 males and 41 females, making 167 in all, were classed under starvation.

11,727 persons died violent deaths; of whom 8,359 were males, 3,368 females. They may be divided into voluntary and involuntary deaths. The number of registered suicides amounted to 1058 (males, 751, females, 307); and in many cases of individuals "found dead," the agent was not ascertained. The tendency to commit suicide increases up to the age of 60; the rate of increase is nearly 50 per cent. every 10 years.

It may be stated, as a general summary of the diseases, grouped according to their pathological characters, that 36,799 died from inflammations, 85,506 from specific inflammations, 19,122 from the terminations of inflammation, 15,125 from hæmorrhages, 2,821 from carcinomatous diseases; 60,868 from tuberculous diseases; 2,256 from disordered secretions, 2,512 from depraved nutrition, 44,773 from disorders of the nervous system, 35,564 from old age, 11,727 from violent deaths.

Mr. Farr dwells with satisfaction on the fact that the results of the Registration in 1838 coincide very closely with those contained in the first report. We are delighted to transfer to our own pages the following high compliment to the country practitioners of Britain.

"The information as to the cause of death was obtained from the medical practitioners of the country, directly or indirectly; and the analysis of their observations, which is here presented, will show that they are not surpassed in intelligence or zeal for the promotion of science by the medical practitioners of any other country in Europe. May I venture to express a hope that they will contribute to render the registration of the causes of death still more accurate by giving, in every case which they attend, a written certificate, drawn up as nearly as may be upon the principles suggested in your first report."

DISEASES OF TOWNS AND OF THE OPEN COUNTRY.

In the first half year of registration the difference between the diseases in a dense and scattered population was remarkable. But this might be accidental. Let us test it by the year 1838, which presented a great range in the temperature and the epidemic constitution.

The population in 1838 would be about 3,726,221 in the city districts, and about 3,539,908 in the counties. The city was probably to the rural population as 1·053 to 1·000; and to this extent (5 per cent.) the deaths

in the counties should be augmented to render the mortality strictly comparable.

Besides the 70,410 persons who died equally in the dense and in the more scattered populations, there was an excess in the cities of 30,609 deaths; 9,970 from diseases of the epidemic class, 7,474 from diseases of the nervous system, 10,465 from diseases of the respiratory organs, and 3,144 from diseases of the digestive organs. The annual rate of mortality in the cities was 2.7, in the counties 2.0 per cent.; and the mortality in the cities 13.6 to 1.00 in the counties. The mean duration of life in the two sets of circumstances would differ nearly in the ratio of 37 years and 50 years.

In examining the special causes of death, three classes may be distinguished; one class which was exaggerated in cities to the highest pitch, a third class in which the mortality was nearly the same or in excess in the counties, and an intermediate class. To 1.00 deaths in the counties the deaths out of the *same amount of population* in the cities were by asthma, 3.80; erysipelas, 2.71; convulsions and teething, 2.57; cephalitis and hydrocephalus, 2.41; hydrophobia, 2.37; pneumonia, bronchitis, and pleurisy, 1.99; delirium tremens, 1.98; typhus, 1.88; small-pox, 1.73; heart-disease, 1.73; childbirth, 1.63; syphilis, 1.59; rheumatism, 1.58; gout, 1.55; hernia, 1.48; purpura, 1.46; sudden deaths, 1.45; liver disease, 1.45; hepatitis, 1.35; tetanus, 1.32. The excess of mortality in cities was less in the following cases: by consumption, 1.24; croup, 1.23; violent deaths, 1.17; stone, 1.11; mortification, 1.10; malformations, 1.07; apoplexy, 1.07; hæmorrhage, 1.02.—The mortality by the third class of causes was greater in the counties than in the cities: for the mortality to 1.00 in the counties was, in the cities, by paralysis, .99; dropsy, .99; jaundice, .99; diabetes, .97; cancer, .92; hydrothorax, .88; hæmatemesis, .79; debility (frequently premature birth), .75; atrophy .75; scrofula 46.

The same injuries and diseases are more fatal in cities than in the country. Parturition, from the frequency of puerperal fever, in town is 63 per cent. more fatal.

"If the mortality in the counties has been taken for unity, and all above it has been termed excess, it must not be understood to imply that less than 70,410 deaths may not be expected to occur out of a population of 3,539,908. The population of the counties, which have been held to represent the country, included the inhabitants of several cities. The mines of Cornwall caused many deaths; and any one who has visited the ill-ventilated dwellings of the poor, and is acquainted with their limited command of colthing, firing, and substantial food in agricultural districts cannot come to that conclusion. The minimum degree of sickness which a well-educated, affluent people would experience, and the years which they would number in the circumstances most favourable to health, are unknown; for the majority of the rich and middle classes whose lives have been observed, live principally in ill-constructed cities, and are exposed to the epidemics generated among their unhappier neighbours. It will be prudent therefore not to speculate upon a state of things of which the registers afford no examples, as it may sound paradoxical to fix more than fifty-five years for the average duration of human life; and it would not be practicable to suggest any means for improving by immediate measures the health of agricultural districts more effectual than the improvement of the cities in their centres, from which so many diseases radiate.

These reflections are extremely just, and extremely valuable. And they ought to attract the serious attention of our legislators. If the public health formed as anxious a subject of inquiry and solicitude, as political and party interests do, the public happiness would be materially increased.

Is, asks Mr. Farr, the excessive mortality of cities inevitable? He observes that it is only of late that such mortality has been fully proved and generally credited. It was scarcely known before the publication of the first report of the Registrar General, that the mean duration of life was from 25 to 30 years in the east districts, and from 40 to 50 years in the north and west districts of the metropolis. A fact so startling is calculated, when rightly considered, to inspire hope rather than dismay. We again quote Mr. Farr:—

“The first writers who established satisfactorily the high mortality of cities took a gloomy and perhaps fanatical view of the question. Cities were declared ‘necrotics of vice, misery, disease, and death; they were proclaimed ‘the graves of mankind.’ The population of the country, it was said, was drawn to them to be sacrificed; and those who entered left all hope behind, for no prospect of health in cities was beheld. Happily the further application of the methods which those eminent writers employed, and the facts which the registers furnish, enable us to analyse the causes of death in the cities; and to show that while the mortality is increased as much as they stated, the apprehensions into which they were betrayed were ill-founded when applied to the future. There is reason to believe that the aggregation of mankind in towns is not inevitably disastrous. Health and life may be preserved in a dense population, provided the density be not carried beyond certain limits. Of this the nature of the causes to which the mortality is due, as well as the rapid improvement in the health of London within the last two centuries, is presumptive proof; and the favourable condition of several districts of the metropolis leaves little room for doubt on the subject.”

Mr. Farr goes on to remark, that the primary objects to be kept in view are, the careful exclusion of all unnecessary animal and vegetable matter; the immediate removal of residual products; and the dilution of inevitable exhalations. The dead should no longer be buried where they are surrounded by crowded dwellings. Unwholesome manufactories should be excluded from densely-peopled districts. And there is assuredly no reason why thousands of cattle, sheep, horses, and animals of every kind—sometimes affected with epizootic diseases—should be gathered to gather in market-places within the city, or slaughtered in houses where the blood and offal can never be effectually removed. Public slaughterhouses have been erected in other places without putting the butchers to any real inconvenience, or raising the price of meat. The supply of pure water, and a system of drains and sewers are other points which have attracted attention. The sewerage of the metropolis has been much improved; but the able Reports of the Parliamentary Committees show not only that there are still deplorable deficiencies and imperfections in the sewers, but that the unsatisfactory state of things is due, in no small degree, to imperfect laws, or to the machinery by which the laws are worked. If a survey were made of the districts of the metropolis, and the levels, the sewers, the drains, and the nuisances known to be pernicious were accurately laid down upon a map, it would be found to agree very remarkably with the table of relative mortality; and the construction of such a map would complete the view of the evil in all its details, and form the basis of a well-planned remedy. It will probably be found that the immense

quantities of agricultural produce brought to London, and disgorged in the sewers, and the Thames, may be collected with less danger to the public health in distant reservoirs, filtered and returned, in the shape of manure, to the fields in the surrounding counties. The population is limited by the amount of subsistence, and the produce of the soil is limited by the quantity of this very organic matter which is so recklessly thrown into the wasting sea.

Wide streets, squares, and parks, with spacious houses, would render ventilation easy, and secure the dilution of poisonous emanations; but the ground is valuable, and building is dear in cities; hence there has been a constant and an unopposed tendency in landlords to accumulate the greatest number of houses on the least possible space in poor districts, and the families of artisans are driven to crowd in small, low, close rooms. The evils from this source are one of the contingencies of poverty and ignorance; they may, however, be met by opening, in the densest neighborhoods, a certain number of wide streets, through which the collateral streets would be ventilated by fresh atmospheric currents. As information spreads among tenants, landlords will naturally render the districts in which their property lies healthy. Men will pay higher rents rather than expose themselves and their families to the risk of sickness and death. The landlords of the metropolis, at whose expense the improvements must be made, are deeply interested in its sanatory state; for every amelioration conducive to the health of the inhabitants, raises the value of houses, while the deterioration of the atmosphere must inevitably drive the wealthy out of town, and lead to the erection of residences in the country, which the facilities of travelling will every day render more accessible.

We of the metropolis, are deeply interested in whatever affects its sanatory state. But our country readers are scarcely less so. For, *mutatis mutandis*, what is true of the metropolis is true of the great provincial towns, and cities with their civilization and diseases are springing up throughout the length and breadth of England.

INFLUENCE OF CLIMATE.

Mr. Farr remarks on the advantage, were it attainable, of determining this. He points out the steps he has taken in his calculations, but we need not specify them. Nor indeed can we insert the tables that embrace them. There is nothing on this head sufficiently satisfactory to detain us.

INFLUENCE OF SEASONS.

Mr. Farr remarks, that reduction of temperature is one source of mortality—malarious exhalations are another. Winter, then, may be the most fatal to the inhabitants of a city on a favourable site, furnished with sewers, or to an agricultural population occupying a dry soil: and summer to the inhabitants of marshy districts, or of cities in which the refuse of organic matter is exposed to putrefaction.

The deaths registered in the metropolis in the winter quarter of 1838

amounted to 15,611: in spring, to 13,109: in summer, to 11,397; and in autumn, to 16,581. Summer was the healthiest, winter the most fatal season: and this rule has prevailed in England since the beginning of last century. It is the reverse of the doctrines of the early English writers, and of the Greek and Roman physicians, summed up by Celsus in the aphorism: *Saluberrimum ver est: proxime deinde ab hoc hiems: periculosior aestas: autumnus longe periculosissimus*. This order of salubrity, still observed in Rome, and in the towns on the shores of the Mediterranean, might be ascribed to the climate, if it had not formerly obtained in London, and other cities on nearly the same isothermal line. Julius Cæsar placed the *middle* of spring, summer, autumn, and winter, at the equinoxes and solstices; and according to this arrangement of the months, in which winter dates from November 11th, the relative mortality of the seasons in London was, winter 26, spring 16, summer 44, autumn 163, in five plague years of the seventeenth century; and in five intercurrent years the mortality was, winter 17, spring 14, summer 15, autumn 24,—precisely the order laid down by Celsus.

The remarkable change in the relative mortality of the seasons in London will be best seen in the subjoined comparison.

The mortality of the seasons in the seventeenth century was deduced from the weekly bills of mortality; and the absolute mortality from the annual deaths, and from an enumeration of the population of the city of London, in 1631. It will be perceived at once, by this comparison, that the high rate of mortality in summer did not, in the seventeenth century, imply a low absolute rate of mortality in any season. The severities of winter were unmitigated, though they were thrown into obscurity by the plague. If the annual mortality of the metropolis had been the same in 1838 as it was in 1603-10, the deaths in the four seasons would have been—winter 26,200, spring 28,210, summer 39,670, autumn 37,960: if it had been as high in July, August, September, as in the plague years, 307,950 might have been registered in three months, instead of 11,397. So much has the health of London improved: so much is life under human control!

And if such extension of existence in the metropolis *has* occurred, why may not equally striking advances still occur? When we look around us, and observe the filth, the crowding, the want of drainage, of proper sanatory regulations, the destitution, and the intemperance that may still be found in the metropolis, and when we reflect both on the obviousness and practicability of the remedies, we may indulge the hope that the increase of this great city will bring with it a corresponding increase of the health, and consequently of the happiness of its inhabitants.

There was a peculiarity in the diseases, and a corresponding irregularity in the temperature, in the year 1838. At Chiswick in the vicinity of London, the mean temperature of winter (January 1st to March 31st) was 40°, spring 55°, summer 61°, autumn 45°, during the 10 years 1826-35; in 1838 the mean temperature of winter was 35°, spring 52°, summer 60°, autumn, 44°. The mean temperature of the year was 47° 6, of the 10 years preceding, 50° 5. The mean temperature of January was 4° below the freezing point; while on an average of the 10 years, 1826-35, it was 1° above the freezing point. In the shade the thermometer fell 4½° below zero, or 14° lower than in 1826-35, when the minimum observed was 10°. The

cold in London was less intense. The temperature of the four seasons at the apartments of the Royal Society, Somerset House, was 36° , 53° , 61° , 45° , of the year 48° . 9. The thermometer did not fall lower than 11° .

The dryness of the seasons, measured at Chiswick with Mr. Daniel's dew point hygrometer, was 2° . 2, 5° . 7, 4° . 7, 1° . 3, in 1826-35, and 1° . 9, 6° . 1, 4° . 2, 1° . 0, in 1838. The moisture was above the average; yet the quantity of rain that fell was only $21\frac{1}{2}$ inches, while the average quantity in 1826-35 was 24 inches.

The electric state of the atmosphere was not observed; but it is indicated by the deaths from lightning, which in the kingdom amounted to 24; in winter 1, spring 10, summer 11, autumn 2.

Professor Lindley has stated that "the winter of 1837-8 was in England more injurious to vegetation than any which has occurred in modern times, and it must be many years before its disastrous effects can be repaired, under the most favourable circumstances."

It is evident from these details that the registration of 1838 is well calculated to exhibit the influence of cold.

The cold increased the mortality in the metropolis from the following diseases to the greatest extent—paralysis, apoplexy, asthma, hydrothorax, bronchitis, pleurisy, pneumonia, influenza, diseases of the heart, &c. diabetes, dropsy, mortification, sudden deaths, and old age.

Cephalitis, hydrocephalus, and convulsions were scarcely more fatal in winter than summer.

Consumption destroyed the greatest number in spring; but the excess of deaths may have been the result of the previous winter's cold. Males suffered from the disease in winter more than females.

Diseases of the digestive organs and some nervous affections prevailed in summer.

PROGRESS OF EPIDEMICS—EPIDEMIC OF SMALL-POX.

Mr. Farr observes that the registration has already yielded facts which are likely to throw light upon the propagation of epidemics. The deaths from small-pox in 324 divisions of the kingdom are exhibited separately in each of the ten quarters, from July 1st, 1837, to December 31st, 1839; a period comprising two winters, two springs, three summers, and three autumns.

The grand epidemic was composed of a succession of smaller epidemics; and, whether the commencement or the acme be considered, it is evident that the disease was not regulated by any cause, such as temperature; for, at the time that it was beginning in one district, it was at its height or was declining in another, placed in apparently the same general circumstances.

The following statement is as valuable as circumstantial.

When the Registration Act came into operation the epidemic of small-pox had commenced, and was rapidly advancing. It was raging at its height on the western side of the island. In Liverpool and West Derby 458 individuals perished, and were registered under small-pox, in the first three months. Bath, with a much smaller population, lost 154 lives; Leicester, 43; Shrewsbury 35. The epidemic prevailed in the south-west

counties in autumn, extending to the districts around Bath, and then passing from Somersetshire to Devonshire, where it destroyed 131 lives in Exeter, and half as many more in the surrounding districts: and to Wiltshire, where 40 died in Calne, Marlborough, and Pewsey, 48 in Devizes, and 22 in Salisbury. It penetrated further into the country; 64 died in Wycombe, 72 in Wolverhampton, 57 in Blackburn, 99 in Wigan. The deaths from small-pox in Wales were tripled; 69 died in Wrexham, 85 in Abergavenny and Pontypool, 54 in Merthyr Tydfil. The hills and the valleys of Wales were traversed, and 711 victims were cut off, in the third quarter, the winter of 1838. The disease hovered over the Metropolis at the first: 22 died in Holborn, 10 in Whitechapel, 16 in St. George's, Southwark, 29 in Lambeth, 47 in Greenwich: the deaths from it were doubled in the second quarter: 753 perished in the winter of 1838. The surrounding districts were infected, Richmond, Kingston, Brentford, Staines, and Uxbridge; Dorsetshire, in the south-west, that had remained almost exempt, was visited; Weymouth, Bridport, Beaminster; then Sherborne, Dorchester, and Cerne; and Taunton that had been just left by dysentery, with Williton, Wellington, and Bridgewater, in Somersetshire. During the winter quarter (1838) not less than 121 died in Bristol and Clifton; 63 in Worcester, 36 in Dudley, 61 in Wolverhampton, 108 in Birmingham and Aston, 40 in Altrincham and Runcorn, 156 in Manchester and Salford. The small-pox mortality attained its maximum in the spring of 1838; the Metropolis saw 1,145 carried to premature graves; Surrey lost 83 by the malady; Kent, 132; Berkshire, 64; Wiltshire, 93; Somersetshire, 252; Gloucestershire, 142; Worcestershire, 89; Warwickshire, 107; Lancashire, 442; Yorkshire, 282; Durham, 88; Cumberland, 44; Monmouthshire, 32; Wales, 515. In three months, 4,489 deaths from small-pox were registered. The epidemic paused, either because its strength was exhausted or its victims failed; yet 3,685 fell under its hand in summer, 3,851 in autumn. On the Surrey side of the Thames, and at the west end of the Metropolis, the mortality attained the highest pitch in the summer and autumn of 1838; in the three last months of the year, 104 died of small-pox in the Westminster district. Ramsgate and Margate suffered severely. In the summer 76 died at Reading; in autumn, 62 in Ely, North Witchford, and Wisbeach, Cambridgeshire; 50 in Romford, Orsett, Billericay; 48 in Rochford and Maldon; 78 in Colchester, Essex; 95 in Ipswich; 48 in Plymouth; 180 in Manchester; 106 in Oldham; 197 in Leeds; 22 in Whitehaven; 38 in Westmorland.

In 1839 the epidemic reached Norfolk: in the spring 127 were destroyed in Walsingham, Docking, Freebridge Lynn, and King's Lynn; 180 in Norwich, where 204 more died in the ensuing summer; the disease still raging in Essex and Suffolk, but with diminished violence. The North and the East Ridings of Yorkshire, Sunderland, Newcastle-upon-Tyne, and Tynemouth, were visited. The epidemic subsided on the eastern shore; and in the summer of 1839 only 1,533 died of small-pox in the kingdom: 65 cases of small pox were registered in London. In the autumn of 1839 signs of a second epidemic appeared at Liverpool, Bath and other towns; the deaths in the kingdom rose to 1,730.

The epidemic destroyed more than 30,819 persons.

The annual rate of mortality from small-pox was 0.8 in 1,000. In the Metropolis 1.1; in Monmouthshire and Wales, 1.2 in 1,000.

Mr. Farr asks if the simple principle of contagion will explain the rapid propagation of the epidemic?

"Not exclusively: for the disease is always contagious, and a certain number of deaths are caused by it in all seasons, and in every county in England. The facilities of intercourse, and the frequency of contact with the sick, are not greater when the disease is increasing, or is at its height, than when it is stationary or declining. The fact that 2,513 died in the first period, 3,289 in the second period, and 4,242 in the third period, must therefore be accounted for, either by assuming that the disease had its origin in some spreading physical cause; that the contagious principle grew more virulent, and was conducted with greater facility by the atmosphere; that the susceptibility of the population increased; or, finally, that the tendency of the organization to fall into this peculiar pathological state augmented spontaneously. Five die weekly of small-pox in the Metropolis when the disease is not epidemic: and it will be recollected that the question is not to account for this rate of mortality, or for the five weekly deaths which may occur as other deaths occur, or be kept up by the uniform transmission of the disease from family to family. The problem for solution is,—Why do the five deaths become 10, 15, 20, 31, 58, 88, weekly, and then progressively fall through the same measured steps?"

He adds:—

"It may be contended that Manchester derived the small-pox from Liverpool. The intercourse between Liverpool and Manchester is perhaps more intimate than between any two towns in Europe. The epidemic broke out early in 1837, at Liverpool, and it appeared in Manchester later in the year; was it not then communicated by the population of Liverpool to the population of Manchester? It may have been so communicated. Epidemics are unquestionably transmitted from one place and people to another; but who will pretend to assert that, if all intercourse had been cut off between Manchester and Liverpool, quarantine had been established, and a *cordon sanitaire* had been drawn, such as was enforced in Prussia when cholera prevailed, that Manchester, with all the materials of disease in its streets, would never have suffered from an epidemic of small-pox. Isolated cases of small-pox existed all the while in Manchester; the seeds of an epidemic were there, and would not the causes which generated the epidemic in Liverpool have led to the same result in Manchester? At any rate, the evolution of the epidemic in Liverpool could not be traced to external contagion; and the problem remains for solution,—why did the deaths from small-pox rise so rapidly, that at least 418 individuals perished in three months, while the ordinary mortality in Liverpool and West Derby, from small-pox, is 27 in three months?"

The upshot of all such inquiries is,—that we know nothing of the matter. It has been supposed, indeed, that epidemics are generations of infusoria. But they have not been seen, and why should they spring up as they do, and appear only at distant intervals? In the present state of knowledge, it is more useful to study the phenomena of epidemics, and determine their more certain and obvious laws. Such there appear, in this instance, to have been.

Mr. Farr terms the ten quarters in which the deaths were registered the ten periods, the first quarter the first period, the second the second period, &c. &c. The mortality increased up to the fourth registered period; the deaths in the first were 2,513, in the second 3,289, in the third 4,242; and

it will be perceived at a glance that these numbers increased very nearly at the rate of 30 per cent. For, multiply 2,513 by 1.30, and it will become 3,267; multiply 3,267 by 1.30, and it will become 4,248. The rate of increase is retarded at the end of the third period, and only rises 6 per cent. in the next, where it remains stationary, like a projectile at the summit of the curve which it is destined to describe.

The decline of the epidemic was less rapid than its rise, and the mortality was somewhat greater in the autumns of 1838 and 1839 than in the summers. But, by taking the mean of the deaths in the third and fourth period, the mean of the deaths in the fourth and fifth period, &c., &c., a regular series of numbers is produced.

Deaths observed in the decline of the Epidemic.

1	2	3	4	5	6	7
<u>4,365</u>	<u>4,087</u>	<u>3,767</u>	<u>3,416</u>	<u>2,743</u>	<u>2,019</u>	<u>163</u>

DEATHS in a regular series.

1	2	3	4	5	6	7
<u>4,364</u>	<u>4,147</u>	<u>3,767</u>	<u>3,272</u>	<u>2,716</u>	<u>2,156</u>	<u>1,635</u>

The mortality from small-pox was greater in the metropolis than in all the other parts of England; and the rate of increase in the second, third, and fourth periods was 1.50, the deaths having been 506, 753, and 1,145. The rate of increase in the first and second periods was 1.97, the deaths were 227 and 506.

The decline of the epidemic in the metropolis is shown by the following numbers:—

METROPOLIS.

	1	2	3	4	5
1. Mean quarterly deaths registered	<u>1,103</u>	<u>959</u>	<u>611</u>	<u>240</u>	<u>91</u>
2. Calculated series	1,103	967	611	278	91

The rates vary with the density of the population, the numbers susceptible of attack, the mortality, and accidental circumstances; so that, to obtain the mean rates applicable to the whole population, or to any other portion of the population, several epidemics should be investigated. It appears probable, however, that the small-pox increases at an accelerated and then a retarded rate; that it declines first at a slightly accelerated, then at a rapidly accelerated, and lastly at a retarded rate, until the disease attains the minimum intensity, and remains stationary.

ON THE NATURE AND TREATMENT OF STOMACH AND URINARY DISEASES: BEING AN INQUIRY INTO THE CONNEXION OF DIABETES, CALCULUS, AND OTHER AFFECTIONS OF THE KIDNEY AND BLADDER, WITH INDIGESTION. By William Prout, M.D. F.R.S. Fellow of the Royal College of Physicians. Third Edition, much enlarged. London: John Churchill, 1841.

DR. PROUT informs us in a Preface to this third edition of his valuable and well-known work, that it has been re-written, and the materials arranged on principles now for some years before the public. As these principles naturally include almost every disease to which organised beings are liable; with the view of familiarising them, and of rendering the different parts of the volume in some degree independent of each other, the leading points have been purposely repeated—a statement thus made at the outset, to obviate the charge of tautology.

The author, in presenting to the public the *results* of nearly thirty years observation and experience, has still kept in view, as much as possible, the *practical* character of his treatise. All chemical and physiological details, therefore, not urgently required, have been avoided. Such details *may* be given in a future volume. In the mean time, conscious of his fallibility and imperfections, the author invites the candid criticism of the *experienced* chemical pathologist, who alone is capable of appreciating his labours.

Dr. Prout need apprehend no other criticism than a candid one, if indeed he can look for criticism at all. We are inclined to doubt his meeting with any. The modesty and simplicity of the man combine with the scientific character of the work to disarm envy and defeat ill-nature. Few can have the wish, fewer, still, the power to display censoriousness. In reviewing such a book the task is made up of pleasure and profit, for to review, in this case, is to learn.

It is not often that we devote a lengthened space to new editions. But the one now before us is virtually a new work, and one so important in every point of view, so calculated to plant sound doctrines in men's minds, and to widen the sphere of their practical usefulness, that we shall depart from our usual plan, and examine it with some minuteness. We shall at all events endeavour to pick out the fresh matter, and present it to our readers, in this and a subsequent article.

The work consists of an Introduction and two Books.

The Introduction offers us an Outline of the General Physiology and Pathology of Assimilation, and of the Secretion of the Bile and of the Urine.

The First Book, on Functional Diseases, contains five Chapters. The *first*—General Observations on the Pathology of Aqueous Assimilation and Secretion; the *second*—General Observations on the Pathology of Saccharine Assimilation and Secretion; the *third*—General Observations on the Pathology of Albuminous Assimilation and Secretion; the *fourth*—General Observations on the Pathology of Oleaginous Assimilation and Secretion; the *fifth*—General Observations on the Pathology of the Incidental Matters of Organised Bodies.

The Second Book, on Mechanical Diseases, contains seven Chapters. The *first*—Of the Origin and Increase of Calculous Deposites in the Kidneys; the *second*, Of Diseases of the Kidneys, produced by, and liable to be confounded or associated with, Calculus in those Organs; the *third*, Of the Origin and Increase of Calculi in the Bladder; the *fourth*—Of Diseases in the Bladder and its Appendages produced by, and liable to be confounded or complicated with Vesical Calculi: the *fifth*—Of Hæmorrhage from the Urinary Organs in general; the *sixth*—Of Suppression, Retention, and Incontinence of Urine; the *seventh*—Observations on the Removal of Calculi from the Bladder; comprising Remarks on the Effects of Solvents for the Stone, and on the Operations of Lithotomy and Lithotritry; with a Review of the circumstances which ought to determine the choice of one of these means in reference to the other, or which render all of them dangerous.

It will at once be obvious to those who are acquainted with the former editions of this work how much is new in the present.

The INTRODUCTION of the volume presents us, to borrow Dr. Prout's own phrase, with the *staminal principles* of the work itself. Though it has been present in parts before the public before this, it has never been embodied in so consistent or complete a form. We shall therefore offer what we deem a sufficient account of it.

The first section, which treats of the ultimate composition and structure of organised bodies; and of their general physical characters as dependent on their composition, we pass over, with the simple announcement of Dr. Prout's belief in the existence of an independent vital principle, or principles. All other hypotheses he looks on as absurd.

Of Alimentary Proximate Principles.—For many years past, Dr. P. has been accustomed to divide these into four great classes, or groups, denominated the *aqueous*, the *saccharine*, the *albuminous*, and the *oleaginous*.

Of the Aqueous Alimentary Principle.—Water, observes Dr. P. constitutes not only the medium in which most organic operations are performed; but its elements, either as water or separately, enter into the composition of every living organised being. The subject of water, therefore, in a physiological point of view, may be considered under two heads, as the medium in, or by means of which, all organic operations are performed; and as an alimentary principle.

The proportion of water entering into the composition of organised beings is so remarkable as to appear almost incredible. Not only does the blood contain four-fifths of its weight of water, but even the parts of the body termed *solids*, that is the muscular mass of which animal bodies chiefly consist, contain in reality only about one-fourth of solid matter. As an instance in illustration, we may mention a fact stated by Blumenbach, viz. that a perfectly dry mummy of an adult Guanche, in his museum, preserved with all the muscles and viscera entire, did not exceed seven pounds and a half in weight.*

* The original inhabitants of the island of Teneriffe are called Guanches. See the Introductory observations to Blumenbach's Physiology.

The water thus constituting so large a proportion of living animal bodies is the medium by which all vital agencies are performed. In the blood, for instance, the solid organized particles are transported from one place to another; are arranged in the place desired; and are again finally removed and expelled from the body, chiefly by the agency of the water present. Water also imparts to the more solid constituents of the frame that peculiar flexibility and power of extension so characteristic of animal solids.

The quantity of water they possess, is continually changed by the operations of organic bodies. The lungs, the skin, the act of drinking, the kidneys, all affect it. And water, and its elements enter into all organic processes.

Of Saccharine Alimentary Principles.—These include a very large class of substances, the general composition of which appears to be similar; that is to say, they consist of a combination of carbon and water in various proportions. The saccharine principles are chiefly derived from the vegetable kingdom, and indeed constitute what may be called, by way of distinction, *vegetable aliments*. As employed by man, some of them exist in the crystallised form, which, from the simplicity of their composition, they readily assume. Of crystallisable saccharine bodies, the chief are *sugar* and *vinegar*; of uncrystallisable or organised bodies, the most remarkable are the different forms of the *amylaceous* or *starchy principle*; the different forms of *lignin* or the *woody principle*; and the different forms of *gum*, or the *mucilaginous principle*.

Sugar is the only crystallisable product employed in considerable quantity as an aliment; and by the perfectly healthy stomach seems to be readily assimilated. There are, however, certain states of disease in which this organ appears to lose, in a great measure, the power of assimilating it.

Vinegar or *Acetic Acid* is constituted like sugar, from which it is readily produced. It has been employed by mankind, in all ages, in greater or less quantity, as an aliment; that is, substances naturally containing it in small quantity have been employed as aliments; or it has been formed artificially from certain bodies with the view to alimentary purposes. Like sugar, this principle appears to be more difficult of assimilation in its pure or crystallisable form, than in that state of mixture or union in which, for the most part, it naturally occurs.

Lactic Acid may be capable of becoming an aliment; but as it is often found unchanged and even developed in the stomach, and indeed in almost all parts of the animal system, it is probably less digestible, and therefore less adapted as an aliment, than the acetic acid.

The remaining saccharine principles are never crystallised, and may be said to be organised.

The *amylaceous* or *starchy principle*, as an aliment, is principally derived from the seeds of the *cerealia* or corn tribe; but varieties of this principle are found in the roots and other parts of many plants; as arrow-root, from the roots of the *maranta* tribe: potato-starch, from potatoes; sago, from the pith of the sago palm, &c.

The *amylaceous principle* is readily assimilated by the healthy stomach, and directly or indirectly forms a constituent of the food of most of the higher animals, as well as of man. It differs, therefore, from sugar, in

being a *necessary* article of food, without which animals could not exist ; while sugar is not. Hence a much larger quantity of amylaceous matter, than of sugar, can be taken ; and what is a still more decisive fact, the use of this larger quantity of amylaceous matter may be persisted in for an unlimited period, which it appears is not the case with a large proportion of sugar.

Lignin, so far as it has been examined, consists of equal parts of carbon and water. It forms the appropriate food of numerous insects and of some of the lower animals, but of few of the higher classes of animals. The reason of this is probably to be sought for, in their not being furnished with organs proper for comminuting and reducing it ; for when lignin is comminuted and reduced by artificial processes, it is said to form a substance analogous to the amylaceous principle, and to be highly nutritious.

The *gummy* or *mucilaginous* principles form a very numerous class of bodies, nearly allied, if not actually belonging, to the saccharine group, into which they appear to merge by imperceptible grades. As instances of these principles in their well-marked forms may be mentioned, the *sugar of milk*, among crystallised, and *gum arabic* among the uncrystallised bodies.

Dr. Prout doubts whether these are adapted for human aliment, for an unlimited time.

Albuminous Aliments are principally derived from the animal kingdom. Hence they are not inappropriately termed *animal aliments*. None of them exist naturally in the crystallised state ; nor can they be made to crystallise by artificial means. Yet certain modifications of them readily assume the crystallised form, and in diseased conditions of the animal economy, in which such modifications occasionally exist in large quantity, they often concrete into masses, and prove a source of secondary disease, as will be shown hereafter.

Dr. Prout describes seriatim the different forms of *albumen*—*gelatin*—*fibrin*—*curd*—and *glutin*. This latter, though chiefly derived from the vegetable kingdom, and, more especially from the seeds of the *cerealia*, and particularly wheat, is analogous to the albuminous principle, in containing azote, and in being capable of separation into two portions, analogous to gelatine and albumen. Hence the superiority of wheat.

Oleaginous Aliments.—However various their forms, these are essentially composed of olefiant gas and water. They are naturally separable into two principal divisions—*fixed and volatile oils*. *Alcohol*, confirming, in composition to the fixed oils, more nearly resembles in properties the volatile. The principal fixed oils employed by man, and derived from the animal kingdom, are *suet*, *lard*, *butter*, *train oil*, &c., while from the vegetable kingdom we have *olive oil*, *nut oil*, and a variety of others.

Such, says our author, are the four great alimentary principles, by which all the higher animals are nourished, and of which their bodies are essentially constituted ; and if we regard carbon as the elementary principle by which *ceteris paribus*, the nutritive powers of three of the alimentary principles are measured or represented, (which, in a certain point of view, may be considered to be the case,) we shall find them to stand in the order in which they have been above described ; that is, the saccharine principles contain on an average from forty to fifty per cent. of carbon ; the albuminous (in-

cluding azote) from fifty to seventy-five per cent; and the oleaginous about eighty per cent. of this principle. These staminal principles readily pass under the influence of the organic agents into one another. They are all susceptible of transmutation into new principles according to certain laws: thus the saccharine principle is readily convertible into oxalic acid; or, under other circumstances, into the modification of the oleaginous principle, alcohol. The proportion of these modifications to the staminal principles is extremely limited.

Dr. Prout concludes, that a diet, to be complete, must contain more or less of all the four staminal principles. Such at least must be the diet of the higher classes of animals, and especially of man. It cannot indeed be doubted that many animals, on an emergency, have the power of forming a chyle from one or two of these classes of aliments; but that the higher animals can be so nourished for an unlimited time is exceedingly improbable. Nay, if we judge according to what is known from universal observation, as well as from experiments which have been actually made by physiologists regarding food; we are led to the directly opposite conclusion, namely, that the more perfect animals could not exist on one class of aliments; but that a mixture of three at least, if not of all the four staminal principles, is necessary to form an alimentary compound well adapted to their use.

Dr. Prout cites as an instance—*milk*, with its water, saccharine principle, caseous or albuminous principle, and oily principle—an instance of such combination in an obviously natural description of aliment. It is impossible, however, to name a substance constituting the food of the more perfect animals which is not essentially a compound of three, if not four of the great principles of aliment. This circumstance saves many animals the labour of forming the great proximate principles from their elements. The inferior animals do this; and hence there is a series, from the lowest being that derives its nourishment from carbon and carbonic acid, up to the most perfect animal existing: each individual in the series preferring to assimilate other individuals immediately below itself; but having on extraordinary occasions the power of assimilating all, not only below but above itself, in the system of organised creation.

OF THE PROCESSES OF ASSIMILATION.

Dr. Prout divides the processes of assimilation into two great classes, the primary and secondary. The primary assimilating processes comprise the process of digestion, and all the intermediate processes up to sanguification, inclusive; while the secondary assimilating processes comprise the processes by which the different textures of which the living body consists, are first formed from the blood; and afterwards re-dissolved and removed from the system.

In both the processes of assimilation, *water* plays an important part. It enters into the composition of most organised bodies in two separate forms; that is, water may constitute an *essential* element of a substance, as of sugar, starch, albumen, &c. in their *driest* states; in which case the water cannot be separated, without destroying the *hydrated* compound. Or water may

constitute an *accidental* ingredient of a substance, as of sugar, starch, albumen, &c., in their *moist* states, in which case, more or less of the water may frequently be removed without destroying the essential properties of the compound. A large proportion of organised bodies contain water in both these forms.

"These," says our author, "containing small proportions of combined water are usually of a firm and stable character, and in common language are said to be *strong* or *high*; while those containing larger proportions of combined water are usually of a delicate and unstable character, and are said to be *weak* or *low*; thus we read of strong and weak sugars, glues, &c. varieties of these principles which are found to owe their peculiar properties to the less or greater proportions of combined water they contain. The processes of converting strong bodies into weak and *vice versa*, are with difficulty accomplished artificially; for instance, though we can in some respects make a strong sugar weak, in no instance do we appear to be able to reverse the process, and to convert a weak into a strong sugar. As these processes, however, constitute some of the most frequent and important of all the processes of a purely chemical character taking place in organised compounds, it becomes necessary to distinguish them by appropriate appellations; and for this purpose I have been long accustomed to indicate the change of a strong into a weak principle, by the term *reduction*, and *vice versa*, the change of a weak into a strong principle, by the term *completion*—a non-enclature which will be subsequently adopted throughout these pages, and which the reader is desired to bear in mind." xx.

Dr. Prout views the primary assimilating process as of two kinds. From the stomach to the duodenum inclusive, the operations are all of a *reducing* kind. The *low* and reduced aliments enter the lacteals as chyle. They are now gradually *raised*, and, by the respiratory process, they are rendered *complete*.

The reducing portion of the assimilating process presents three forms.

"First, the stomach has the power of dissolving alimentary substances, or of bringing them into a semifluid condition. This operation seems to be altogether chemical, and probably essentially consists in the combination of alimentary substances with water; that is, in *reducing* the alimentary substances from a high to a low condition. Secondly, the digestive aliments, or the chylous portion of the chyme taken up by the lacteals, though the proportions of its different ingredients may vary, is always essentially the *same* in its composition. The digestive organs, therefore, and more especially the stomach, must possess the power, within certain limits, of changing into one another the simple alimentary principles formerly described. This part of the operations of the stomach appears, like the reducing process, to be *chemical*; but not so easy of accomplishment. It may be termed the *converting* operation of the stomach. Thirdly, the crude and dead aliments undergo changes in the stomach, &c., which render them fit to be brought into contact and even union with the *living* animal body; the stomach and assimilating organs, therefore, must possess the power of *organising* and *vitalising* the different alimentary substances. It is impossible to imagine that such organising agency of the stomach can be chemical. This agency is *vital*, and its nature is completely unknown." xxi.

The *solvent power* of the stomach is described by Dr. Prout. It seems essentially to consist in effecting the more intimate combination of the alimentary principles with water. This is mainly due to the action of the gastric juice. Of this important secretion, says Dr. P. *chlorine*, in some state or other of combination, is an ingredient—it would seem a *necessary*

ingredient; for the secretion in its healthy state always contains more or less of chlorine.

The chlorine of the stomach is exceedingly liable to derangement. Often a large quantity of free muriatic acid is elicited instead, a source both of uneasiness and interference with the reducing process.

The source, says our author, of this chlorine or muriotic acid must be the *common salt* which exists in the blood; to suppose that it is generated, is quite unnecessary. The chlorine, therefore, is separated from the blood, at least in part; and it may be demanded what is the nature of the agency capable of separating the chlorine from a fluid so heterogeneous as the blood? That agency he considers a *modification* of electricity, common electricity being manifestly unequal to the operations effected.

What then becomes of the soda? This, says Dr. Prout, remains behind, or is absorbed into the mass of blood, and a portion of it no doubt is requisite to preserve the weak alkaline condition essential to the fluidity of the blood. But the larger part of this soda is probably directed to the liver, and is elicited with the bile in the duodenum; where it is thus again brought into union with the acid, which had been separated from the blood in the stomach. "Admitting," he adds, "that the decomposition of the salt of the blood, &c. is owing to the immediate agency of a modification of electricity, we have in the principal digestive organs a kind of galvanic apparatus, of which the mucous membrane of the stomach and intestinal canal, generally, may be considered as the acid or positive pole, while the hepatic system may, on the same view, be considered as the alkaline or negative pole."*

Many of our readers are aware that this is an old notion of Dr. Prout's. Fanciful, as no doubt it is, the facts that it attempts to explain subsist, unaffected by its stability or otherwise.

Other acids, and particularly the lactic acid, are occasionally, if not always present during the digestive processes. Dr. Prout's own opinion is that, though frequently present in the human stomach, it is rather to be considered as the result of unnatural irritation, produced by disease, indigestible aliments, &c. than as a healthy product *necessary* to the digestive process. The source of the lactic acid, also, is probably different in different instances. Sometimes it may be derived from the food; at other times, and that most frequently, it seems to be immediately derived, like the muriatic acid, from the blood itself. The lactates exist in the blood, and it may in part be derived from the lactates already formed in that fluid. There is, however, every reason to believe, that when very abundant, it is derived from the decomposition of the blood in the extreme vessels of the stomach, &c.

* "This notion or opinion, which was first advanced by me many years ago, seems to have lately received some confirmation from the experiments of Matteuci, who found that when the liver and stomach of a rabbit were connected with the platinum ends of the wires of a delicate galvanometer, a deviation of the needle amounting to fifteen or twenty degrees took place. This action became very feeble or entirely ceased, after the death of the animal: hence he inferred that it depended on the vital action of the organs, and not on the differences of the chemical properties of their secretions. Matteuci, l'Institute, No. 75."

Another acid, an occasional result of unhealthy assimilation, is the oxalic. Its relation to the saccharine elements may sufficiently explain its development. It may also be taken into the stomach as an alimentary matter, for instance, in the stalks of rhubarb, sorrel, &c. Small quantities of oxalic acid thus developed or introduced into the stomach, do not appear to give much uneasiness in that organ; and when introduced, it may in some instances, like other saccharine derivatives, be assimilated. It is secondarily that the oxalic acid proves formidable.

As to the butyric, acetic, carbonic, and other acids occasionally met with during the digestive processes in the stomachs of animals; these are probably in a great degree the results of indigestion, and derived from the mal-assimilation of the alimentary matter.

Of the Converting Powers of the Stomach, &c.—Chyle is remarkably uniform, with great varieties of food. Though the albuminous and oleaginous principles need undergo no change, yet the saccharine must. The changes are probably chemical, though Dr P. admits that we cannot trace the conversion of sugar into albumen. Whence comes the azote of the albumen? Dr. Prout believes that it may, in some instances, be derived from the air or generated; but that, under ordinary circumstances, it is principally furnished by a highly azotised substance (organised urea?) secreted from the blood, either into the stomach or duodenum, or into both these localities; and that the portion of the blood thus deprived of its azote, is separated from the general mass of blood by the liver, as one of the constituents of the bile; which secretion, as a whole, is remarkably deficient in azote.

Under ordinary circumstances, then, the converting powers of the stomach must essentially consist of the three kinds mentioned, viz. the conversion of saccharine aliments into albuminous and oleaginous principles; the conversion of albuminous principles into oleaginous principles; and the conversion of oleaginous into albuminous principles.

Of these, the first is the most important. As it belongs also to vegetables, it is, perhaps, the lowest step in alimentary renovation. The derangement or partial suspension of the power of converting the saccharine principle in man, not only constitutes a formidable species of dyspepsia; but the unassimilated saccharine matter, in passing through the kidneys, gives occasion to the diseased *diabetes*.

Of the Organising and Vitalising Powers of the Stomach, &c.—Of these we know absolutely nothing, and we need not, therefore, discuss them.

In the *duodenum* the acid of the stomach combines with the alkali of the bile, and the albuminous principles are fully developed, and begin to separate from the excrementitious. In the *lacteals*, the water is gradually removed, and the completing process goes on.

OF THE SECONDARY ASSIMILATING PROCESSES.

Dr. Prout thinks it necessary to enter into an explanation of the sense in which he uses these terms.

“The secondary assimilating processes include two great divisions, which,

for the sake of distinction, may be termed the *formative* and the *destructive*. Under the head of the secondary formative assimilating processes, are included the different processes by which the principles of the blood are converted into the different tissues composing animal bodies, as well as the different secretions designed for ulterior purposes in the economy; while under the head of secondary destructive assimilating processes are included the extinction (secondary digestion) of the different tissues of the body, and their conversion, either into new principles designed for ulterior purposes; or into disorganised products designed to be removed from the body, or more frequently into products belonging to both these classes of substances." xxxiv.

Dr. Prout thinks it requisite thus to explain the general principle on which these different processes are conducted.

"When a definite substance, like the albumen of the blood, for instance, is converted into one or more new principles, either the entire elements composing the albumen must be re-arranged so as to produce a principle having new and different sensible properties; or what appears to be infinitely more common, and indeed the rule, the elements of the simple principle must be so arranged as to form *two* (or more) principles, either of which may be said to be *complementary* to the others; that is, the composition of one (or more) of the new principles must be such, as, in conjunction with the remaining principle, will *complete* the albumen, from which all the new principles were originally formed.*

Complementary decomposition is at least of two kinds; a substance may be changed into a new principle designed for ulterior purposes, and another principle designed to be excrementitious; e. g. albumen may be decomposed into gelatine, and hydrated carbon capable of becoming carbonic acid on exposure to air in the lungs. Or a substance may be decomposed into two principles, both of which may be designed for ulterior, or both for excrementitious purposes. Instances, perhaps innumerable, of these two forms of change are constantly taking place in the animal economy; though the first seems more naturally to belong to healthy action; the second to disease. Thus albumen and gelatine are converted into principles, one or both of which are applied to further uses in the economy; whereas, in peculiar states of disease, gelatine in particular appears to be almost wholly converted into some modification of the saccharine principle and urea; both of which from their properties may be considered as excrementitious." xxxv.

As an instance of the decomposition of a principle into three or more complementary principles, Dr. Prout cites gelatine, which is often converted into oxalic acid and the carbonate of ammonia.

Dr. Prout next touches on the *incidental* elements contained in organized bodies. Their incidental mineral matters are supposed to be as fixed and definite, both in their nature and quality, as the essential elements of which such bodies consist. Thus the nervous mass is characterised by the presence of phosphorus; a peculiar tissue intimately connected with the nervous by

* "The part that water plays in complementary decomposition is often very important, and, to prevent misconception, deserves to be noticed. The original substance to be decomposed is often decomposed [†] or - water; that is, the complementary principles into which a substance is decomposed, do not exactly make up the substance as it usually exists, but the substance, plus or minus, one or more proportions of water. This circumstance is of such frequent occurrence in organic decompositions, as almost to constitute the rule rather than the exception."

the presence of magnesia; certain submucous tissues, by the presence of lime, &c. Dr. Prout agrees with Berzelius in general, that such incidental matters usually exist in their elementary condition in organised products, and not as binary compounds; and that they assume the form of binary compounds or oxides, in which they commonly appear, during the destruction of the organised principle.

Dr. Prout would deduce as important practical inferences from these facts—that when incidental mineral matters appear as binary compounds among organised products, the mal assimilation or destruction of organised tissues is not only indicated; but the exact nature of the tissue thus mal-assimilated or destroyed, may be predicated from the nature of the binary mineral compound.

Dr. Prout now passes to the leading formative and destructive processes of secondary assimilation.

Gelatification is that process, by which a certain portion of the fluid albuminous principle of the blood is converted or assimilated into the solid gelatinous tissues of living beings. The gelatinous tissues are the staminal and fundamental ones of the body. The process of gelatification takes place in the extreme capillary blood-vessels, and at the moment when the arterial is converted into venous blood; a phenomenon, therefore, intimately connected with, if not in some degree dependent on, the gelatifying process. Dr. Prout, in his *Bridgewater Treatise*, attempted to shew that when albumen is converted into gelatine, carbon is eliminated, which carbon (partly perhaps in a hydrated, partly in an oxygenated form,) remains associated with the venous blood till its arrival in the lungs; where, by combining with the oxygen of the atmosphere, it becomes fully oxygenated, and is converted into carbonic acid gas, and in this form makes its escape from the body.

Albumification, the process by which the fluid albuminous principles of the blood are converted into the solid albuminous tissues of living bodies. Albumification, therefore includes albumification properly so called; or that process by which the albumen of the blood is converted into the albuminous textures of the body; and *fibrification*, or that process by which the fluid fibrine of the blood is converted into the solid muscular fibrin of animals. During these processes, water must be eliminated.

The changes undergone by the oleaginous matters cannot be exactly stated. They undergo certain depurating processes, the separation of water not being the least important.

Another class of processes of the formative kind, belonging to the secondary assimilation, some of which are connected more especially with gelatification, others with albumification, are the formation of solid matters, as of bones, horn, hair, &c. While still another class may be supposed to include the different fluid secretions derived from albuminous and oleaginous matters, and destined for ulterior purposes; such as the saliva, the different gastric secretions, the spermatic fluid, various oily or resinous secretions, &c.

Dr. Prout passes on to the secondary assimilating process of the destructive kind.

Of the Ulterior Changes of the Gelatinous Tissues.—Dr. Prout rather thinks that, to a certain extent, these tissues are converted, in the healthy state, into materials of a higher kind. But the more common ulterior alterations are of another description. He has long conceived that one mode in which

the gelatinous tissues become effete, is by their conversion into two classes of complementary principles, of which urea, or its equivalent, constitutes one principle; and the saccharine principle in some of its forms, (most frequently in the form of lactic acid,) the other. Both these classes of complementary principles escape by the kidneys in their chrySTALLISABLE forms, in large quantities; particularly the urea; the lactic acid, escapes, also, from the skin, and from other parts of the body. These changes become mischievous only when excessive, or otherwise abnormal: for example, when the urea is converted into the carbonate of ammonia, or the saccharine principle into oxalic acid, &c.

Of the Ulterior Changes of the Albuminous Principle.—They are little understood. He has no doubt that certain portions do become effete, and are eliminated. He thinks that one of the chrySTALLISABLE principles thus formed from albumen during the secondary destructive assimilating processes is lithic acid, most usually in the state of lithate of ammonia. The class of substances complementary to the lithate of ammonia appear to consist of certain ill-defined principles, to be alluded to hereafter—the formation of lithic acid or its compounds in excess, proves a source of disease. And Dr. P. suspects that many formidable diseases are occasionally connected with the destructive mal-assimilation of the albuminous principles; from which principles various matters of a highly deleterious character, and related to the poisonous principle cyanogen, as a basis, may be readily supposed to be eliminated.

Of the Ulterior Changes of the Oleaginous Principle, we know even less than of the albuminous. But the large proportion of oleaginous matter which enters into the composition of the nervous mass, shows the important part which oleaginous matters perform in the animal economy; and the disappearance of fat during the process of hybernation, and under many other circumstances, indicates that this principle is most extensively appropriated during the secondary destructive assimilating processes.

On the General Pathology of the Primary and Secondary Assimilating Processes.

This section may be said to give their signification and application to the preceding details.

Primary Mal-Assimilation is mal-assimilation in sanguification. It may occur—*a.* during the digestive processes taking place in the stomach; *b.* during the processes taking place in the duodenum; and *c.* during the subsequent processes taking place in the chyloferous system; or in all these localities simultaneously.

a. Mal-assimilation during the *digestive* processes, may more especially belong to the reducing, the converting, or the vitalising functions of the stomach.

Mal-assimilation most frequently commences with derangement of the *reducing* process of the stomach. When any substance incapable of being reduced or dissolved is taken into the stomach, even in its healthy condition, one of the first effects produced is the secretion from the stomach of a large quantity of acid, of which the *lactic acid* appears to constitute a chief ingredient.

The effects of such acidity, immediate and remote, need not be insisted on, and what is not reduced or dissolved, can never be *converted*, much less *vitalised*.

Derangements of the *converting* function occasionally constitute an original disease, the effects of which are still more formidable than those arising from disordered reduction. Thus in diabetic affections, the reducing function of the stomach seems, in some instances, to be almost morbidly active; and farinaceous (and even other) matters are reduced to the condition of low saccharine matter, which the converting function of the stomach is incapable, as in health, of changing into the elements of chyle or blood. The consequence is, that this reduced or dissolved saccharine matter is taken up with the little chyle that may be formed; and after producing various derangements in its transit through the system, is ejected with the urine. Again, the converting process may be wrongly performed; the saccharine matter, for instance, instead of being converted into chyle, may be converted into oxalic, lactic, or other acid and deleterious matters, which may not only produce much local discomfort, but serious disorder in their subsequent passage through the sanguiferous system and kidneys; or even through the bowels.

Or the *vitalising* process may be alone suspended or deranged. Thus, when more food is taken by healthy individuals, than is required for the purposes of the animal economy, such superfluous matters are finally elicited either with the bile; or, in the form of lithate of ammonia in the urine.

b. Primary mal-assimilation in the duodenum appears to be more generally the result of mal-assimilation in the stomach, than an original state of disease. The acid matters resulting from the disordered reducing powers of the stomach are not neutralised in the duodenum, and great uneasiness is the result. A portion of the acid is probably absorbed with the chyle.

"In slighter cases of a temporary character, the effects pass off, and all becomes right again: but in severe and protracted cases, arising from derangements of the digestive organs, connected with inveterate constitutional diseases, or from long exposure to strong exciting causes, as malaria, &c, the case is different; and the acid and unnatural matters make their way from the chyliferous system into the abdominal veins; the blood in which vessels often become quite black, and sometimes acid. Now as this unnatural blood passes through the hepatic system, the functions of the liver become disordered, and the bile, if not actually rendered acid, at least loses its neutralising properties; and thus the mischief becomes perpetuated. An extreme case is here supposed for the sake of illustration; such, perhaps, as it occurs in the remittent fevers of tropical climates only; but similar phenomena appear in an infinite variety of forms and grades, as the results of mal-assimilation, in all climates." xiv.

It will be observed that Dr. Prout accounts, in this chemical, possibly too simple, fashion, for the furious remittent fevers of the West Indies and of Africa. We cannot, however, help suspecting that the operation of malaria is of a deeper and more recondite description. It is right indeed to add that Dr. Prout admits that a variety of other unnatural matters of a complementary character, many of them of an acid, perhaps of a poisonous character, must likewise be generated, and thus contribute, in various ways and degrees, to aggravate the disorder.

c. Dr. Prout believes that the consequences of primary mal-assimilation of the lacteal system are most important, especially in the earlier periods of

life and adolescence. Dr. Prout advances some opinions on this subject, which we cannot help thinking will take our readers by surprise.

"Now in early life, under such circumstances, from some causes which I do not profess to explain; but probably from causes connected with original weakness or deficient action of the assimilating organs and of the kidneys; or rather in short, of the whole system; the imperfectly assimilated chyle in passing through the lacteal system, either does not undergo the necessary changes by which chyle is converted into blood; or is mal converted into the comparatively insoluble pseudo-albuminous matter of struma; which in passing through the lungs lays the foundation (perhaps at first mechanically) of tuberculous deposition, and future accretion. Whether or not this be admitted, I believe no one will deny who has studied the subject, that about the age we are now considering, the assimilating organs in strumous and consumptive habits are peculiarly deranged; and that great attention to diet, &c., at this age, (when diet is least apt to be attended to, and all sorts of crudities are taken,) will not only sometimes ward off those phthisical attacks, which, when once established, will inevitably run their fatal course; but prevent many nearly allied diseases in after life."*

Setting aside the more severely chemical part of the evidence there do appear some circumstances which favour the notion of the connexion of struma and a tendency to form lithic acid—we allude to the acidity in the primæ viæ, and to the tendency to lithates in the urine of those weakly children who are also subject to struma. But, on the other hand, we are staggered when we contrast the rule health, plethoric habit, and, seemingly, strong constitution of the gouty man, with the delicate organization, weakly frame and valetudinary condition of the scrofulous. At first sight, no two affections can seem more opposed than gout and phthisis. Whether chemistry is in the right, or more simple observation, we shall not venture to pronounce.

Of Secondary Mal-Assimilation.—The entire suspension, says Dr. Prout of the formation of the gelatinous process s from the blood is probably incompatible with life; but the mal-formation and consequent imperfect development of gelatine seems to take place in a variety of degrees and modes. Circumstances also appear to show, that destructive mal-assimilation is equally, if not more frequent than the formative mal-assimilation of the gelatinous tissues; at least as far as regards the class of derangements we are now considering. It is probable, however, that in all instances, both formative and destructive mal-assimilation not only of the gelatinous, but of

* "Strumous, lithic acid, and gouty diseases, are all the results of mal-assimilation of the albuminous principle, either primary or secondary; and often gradually run into each other. Thus gout and struma are frequently, if not always, associated; and the gouty chalkstones of old age may be considered as little more than modifications of the scrofulous tubercle of youth, both being alike formed from mal-assimilation of the albuminous principle. Moreover, the offspring of those labouring under gout and struma are (other circumstances being favourable) more subject, during the period of adolescence, to tubercular phthisis, than other individuals. Large deposits of the gouty chalkstone, in middle or advanced age, are often accompanied by incipient disease of the kidneys." xlvii.

all the other tissues, takes place in a greater or less degree simultaneously. As illustrative of these remarks we may observe, that during the secondary formative assimilating processes, instead of gelatine, various unnatural compounds, as sugar, oxalic acid, &c., may be produced; which may not only interfere with the immediate functions of the organs affected, but with the functions of remote organs, as the kidneys, &c., destined to remove such unnatural matters. Again, during the secondary destructive assimilation of the gelatinous tissues, not only the same unnatural matters, as well as others, derived from them, may be generated; but matters of a complementary nature, and of a still more injurious character, may be produced.

Similar remarks, says our author, are applicable to secondary mal-assimilation of the albumificating processes. As instances of the unnatural matters developed during the secondary mal-assimilation of the albuminous tissues; strumous matters, the gouty chalkstone, &c., may be mentioned as developed by formative mal-assimilation; while instead of the lithate of ammonia, which seems to be naturally developed during the destructive mal-assimilation of these tissues, various poisonous principles having relation to the lithic acid in their composition, such as the different compounds of cyanogen, &c., before alluded to, are in some instances undoubtedly generated, and prove the source of formidable secondary derangements, and even of death itself.

Mal-assimilation of the oleaginous principles is of equal, if not greater consequence than the albuminous and gelatinous.

The following remarks of Dr. Prout seem to us extremely just.

"When too much food is taken relatively to the constitution of an individual, either the primary or secondary assimilating processes, or both, may more especially suffer. In some instances, the primary assimilating organs are so weak and so easily deranged, that individuals are constrained to be careful, both with respect to the quantity and quality of their food; and such individuals often escape the more serious and deeper-seated diseases of a secondary kind, arising from excess. On the other hand, there are individuals whose primary organs will permit them to take with impunity enormous quantities of all sorts of matters. In some of these instances, such matters pass off by the bowels very little assimilated in others, a large portion of them undergo, more or less perfectly, the primary assimilating processes, and are carried into the mass of blood; and individuals in whom this takes place, suffer more especially from derangements of the secondary assimilating processes; as from hepatic congestion, gout, &c., particularly about the middle periods of life, when the consequences of excesses of all kinds begin to be manifested." 1.

Dr Prout points out the connexion between hypertrophy and dropsy. But it does not call for more particular notice. He observes that, when the mal-assimilation is chiefly confined to the gelatinous tissues, the derangements are more especially displayed in the form of certain cutaneous affections, destructive suppuration, or other disease, of the cellular tissues; likewise diabetes, oxalic acid affection, &c. When the developement &c. of the albuminous tissues is chiefly deranged, organic diseases of various kinds connected with these tissues, also lithic acid gravel, &c. are usually the result. Finally when the mal-assimilation is excessive, and involves the oleaginous in conjunction with the other tissues, the consequence is usually some form of malignant or incurable organic disease.

And, lastly, Dr. Prout insists upon the much more formidable character of secondary diseases depending on secondary mal-assimilation, than of secondary diseases the result of primary mal-assimilation.

We have a section on the general composition and properties of the blood. There is nothing in it to call for notice. He cites the well-known analysis of Lecanu, and remarks upon it:—One of the most obvious facts that first strikes our attention, is the conspicuous place, among the constituent principles of the blood, occupied by two of the great alimentary principles formerly described, viz. the albuminous and the oleaginous principles; while the third the saccharine principle, is entirely absent. Even the animal (saccharine) principle gelatine, though existing abundantly in various structures, is never found in the blood, nor in any product of glandular secretion. The only constituent of the blood we can suppose to *immediately* represent the saccharine alimentary principle, is perhaps the lactic acid, which Brezelius places among the constituent principles of the blood, and of most animal products soluble in alcohol. M. Lecanu, however, has not specified the lactic acid among the results of his analysis; although there can be little doubt that this acid, if not always present, is at least very rarely absent from the blood.

The next section treats—

Of the functions of the liver, and of the relation of the bile to the assimilating processes. Of the composition of the bile: and of biliary concretions.—Dr. Prout points out that the liver is of necessity a great depurating organ—but it also secretes matters absorbed with the chyle—the soda, for example, one. The account of the composition of bile is elaborate, and, no doubt, precise. We must refer such of our readers as are anxious for it to the work itself. We may merely observe in the words of Dr. Prout—that the general results of all the analyses of the bile, then, as already stated, are—that the chief organic ingredients, in their general character and composition, partake of the oily character, and contain, probably, at least 80 per cent. of carbon; and—that the saline contents of bile consists principally of soda, which, if not in actual combination with the biliary ingredients, is at least in some other very loose state of combination.

Biliary Concretions.—The most frequent are cholesterine in different degrees of purity. Then come gall-stones, consisting of inspissated bile. Biliary concretions composed almost entirely of the colouring matter of the bile are exceedingly rare in the human subject. And, lastly, Mr. Taylor has described an unique concretion, supposed to be biliary, of *stearate of lime*. We proceed to the eighth section—

Of the functions of the kidneys; and of the relation of the urine to the assimilating processes. Of the composition of the urine; and of urinary calculi.—Dr. Prout quotes from Rayer, and we feel disposed to quote again, the estimate of the latter gentleman, of the varieties in the weight and size of the organs in the two sexes, and at different ages, &c.

1. That the kidneys of individuals of the same age are never exactly of the same weight.

2. That immediately after birth, the development of the kidneys, though progressive, offers such differences, that in one case the weight of a kidney

of an infant of seventeen days old, may be strikingly less than the kidney of another infant of two days old.

3. That in infancy, adult age, and in manhood, the same differences in the weight of the kidney at the same age, are equally observable; so that the determination of atrophy or hypertrophy of the kidneys is not possible, unless the difference in the weight of the kidneys be very remarkable.

4. That the weight of the kidneys in women, particularly in old age, is less than in men.

5. That the left kidney generally weighs more than the right, at all ages.

6. That in old age the kidneys are generally as heavy as in the prime of life.

7. That when the kidney of an adult or old man, without any remarkable alteration of structure, varies much from three ounces (*French weight*), it ought to be regarded as having a morbid or an anomalous tendency; that is, a tendency to atrophy or hypertrophy congenital or accidental.

The size of the kidneys is not always proportional to their weight; but, generally speaking, the kidneys attain their largest size in adult age. As age advances, they usually become less in bulk, but firmer in consistence; so that, as above mentioned, the weight of the kidney at this age, does not diminish in proportion their bulk.

M. Rayer has found the size of the kidney to vary in males, between eighteen and forty-five years of age, from three inches ten lines long, one inch one line wide, and one inch one line in thickness; to four inches ten lines long, two inches six lines, wide, and one inch and nine lines in thickness, (*French measure*.) On the contrary, in males between fifty-five and eighty years of age, the variations have been between three inches six lines long, one inch six lines wide, and one inch thick; and four inches two lines long, two inches four lines wide, and one inch and five lines thick. In females the variations have been less remarkable.

Dr. Prout is now disposed to think, that if we suppose that the quantity of urine varies in this country from 30 ounces in the summer to 40 ounces in the winter, we shall be probably very near the truth, as regards a person in good health, and who does not drink more than the simple wants of nature require.

After long attention to the subject, too, he is of opinion that the standard specific gravity of the urine of a healthy person in the prime of life during the whole year in this country, scarcely reaches 1.020. If, therefore, we estimate the average specific gravity to range from 1.015 in the winter to 1.025 in the summer, we shall be probably very near the truth as regards the generality of well-fed individuals who are ordinarily reputed to be in good health.

Dr. Prout gives a table of the normal and abnormal constituents of the urine, and comments on each in detail. We shall only notice such remarks as may appear peculiar, or important. We introduce one in reference to *urea*.

"Urea was first analysed by myself, about twenty-five years ago; and from its composition I was satisfied that it might be formed artificially. I made numerous attempts to form it, but did not succeed; and the honor of forming the first organic product artificially, is due to Wöhler. Urea is supposed to be generated during the destructive assimilation of the gelatinous tissue, and probably always exists in the blood in minute quantity. In certain diseases, of the kidney, however, urea exists in the blood in considerable proportions; a fact established by Dr. Christison, and confirmed by many others." lxxiii.

And we quote too a practical hint that may be serviceable to those who are no great chemists. For practical purposes, an excess of urea may be shown

by putting a little of the urine into a watch-glass, and adding to it carefully about an equal quantity of pure nitric acid, in such a manner that the acid shall subside to the bottom of the glass. The mixture must be kept as cool as possible; and if under these circumstances a crystallised deposit be formed, an excess of urea is indicated. The degree of excess may be inferred, near enough for *practical* purposes, by the length of time which elapses before crystallisation takes place; which may be from a few minutes to two or three hours. The detection of a *deficiency* of urea requires a more elaborate process, which will be found detailed in most recent chemical treatises.

Dr. Prout sticks to his old opinion that the lithic acid exists in the urine, and is held in solution in combination with ammonia, and his reasoning appears conclusive.

Dr. Prout gives a full account of the recent researches of Liebig and Wöhler, on the changes which the lithic acid is capable of undergoing. They are too chemical, however, we might almost add too controversial, for our present purpose. We must content ourselves with stating, as Dr. Prout's conclusions, that the red colour of the urinary sediments is sometimes partially due to the action of the nitric acid on the yellow colouring matters of the urine—in short, that the lateritious and pink sediments of the urine partly depend on the purpuration of ammonia, or some modification of this compound, and partly on the altered yellow principle of the urine; that in different instances, and in different diseases, the two red colouring matters thus produced, are mixed in various proportions; and finally, that the one or the other colouring matter predominates, according to the nature of the disease.

Another point to which we may refer is the *cause* of the deposition of lithic acid in the free state. Now any acid, even the carbonic, added to healthy urine, will throw down the lithic acid, in a crystallised form, a proof that the urine contains no uncombined acid. "When therefore," says Dr. Prout, "the lithic acid is deposited from the urine in the crystallised form, the inference must be, that a free acid exists in the urine; and the question is, what is the nature of this acid; The answer, I believe, to this question is, that in the great majority of instances, the immediate cause of the precipitation of lithic acid gravel is the lactic acid. In some instances, the mineral or other acids may be the *remote* cause of the precipitation; that is, such acids may, from their stronger affinities for the bases present, combine with them and separate the lactic acid, which may thus act immediately as the precipitant, as just stated. In the greater number of instances of lithic acid gravel, however, the lactic acid seems to be actually secreted in excess; either separately, which is comparatively rare; or in a state of combination with urea, which seems to be the rule. Now, as urea has little or no neutralising power, the lactic acid in the lactate of urea exerts its acid powers, and by detaching the lithic acid from its natural state of combination with ammonia, precipitates it in the form of crystallised gravel. As corroborative of this opinion, it may be stated, that the lactate of urea may be sometimes obtained in large quantities from urine depositing lithic acid gravel. This explanation also leads to the explanation of another pathological fact, viz. the frequent presence of sugar in urine depositing lithic acid gravel; and *vice versa*, the frequent appearance of lithic acid gravel in slight forms of

diabetic disease. The lactate of urea, and the saccharate of urea, are in fact but modifications of the same substance, and may both be considered as the representatives of gelatine; the lactic acid being, as we have said, only a modification of the saccharine principle. Hence, by very slight variations in the action of the vital affinities, the acid or the sugar may predominate and give occasion to the phenomena in question. These remarks are also further interesting, since they illustrate certain facts mentioned in other parts of the volume, viz. that the appearance of sugar in lithic acid deposits, is an unfavourable symptom; while, on the other hand, the deposition of lithic acid gravel and of the lithate of ammonia in diabetic urine may be considered as favourable. In the first of these cases, a natural product, the lactate of urea, has given way to an unnatural product, the saccharate of urea; while in the second, the unnatural saccharate of urea, has given way to the natural products, the lactate of urea and the lithate of ammonia,—facts showing that both the gelatinous (saccharine) and albuminous matters are at least partly assimilated.”

The *smell* of the urine has never been satisfactorily explained. It is probably connected with some indefinable compound, into which sulphur, phosphorous, and azote, largely enter. The smell of the urine also, as is well known, is liable to be much affected by various articles taken into the stomach, as asparagus, turpentine, &c.

Sulphur in Cystic Oxide.—Dr. Prout admits the justice of the discovery already alluded to in another part of this Journal—that the cystic oxide calculus contains sulphur. He says—

“I analysed this substance many years ago, and the analysis has been lately confirmed in all respects, except that one half of the matters which I *estimated* to be oxygen, has been proved to be sulphur. I had long suspected that this curious substance contained another principle besides the four usual constituents of organic products; and was about to verify my conjecture, when I heard of the above discovery. I suspected the presence of phosphorous rather than of sulphur.” xciii.

Indigo in the Urine.—A substance supposed to be Prussian Blue has been met with in the urine. Braconnot has described a substance under the name of *cyancurine*, occasionally found in the urine, and which sometimes tinges it blue. From its properties, this substance appears to be nearly allied to certain vegetable blues; and hence it may, as Mr. Rees has observed, be probably derived from some vegetable substance taken as food. Dr. Prout once met with an instance in which indigo was occasionally voided in the urine, in considerable quantity. The patient was a middle-aged man of a nervous temperament. He was in the habit of taking Seidlitz powders; and the indigo most generally appeared in the urine, in the form of a dark blue sediment, after taking one of these powders. The quantity was so considerable on one occasion, as to allow of its being collected and examined; when it was found to possess all the properties of indigo, and was obtained in a state of purity by sublimation.

Pus and Mucus.—Dr. Prout admits the difficulty of accurately distinguishing them. He adds—“Pus, however, when well-marked, may be distinguished from mucus by being essentially composed of *particles*. Hence, when diffused through the urine, which it readily may be, pus, after a time, again subsides to the bottom of the vessel, in the form of a pale greenish-

yellow pulverulent deposit; and the urine assumes its transparent character; properties by which pus is strikingly contrasted with mucus. Urine containing pus is almost invariably albuminous; another property by which purulent urine is contrasted with urine merely containing mucus. A third circumstance by which pus and mucus are strongly opposed, consists in the character of the urine. Urine containing pus, particularly when of low or moderate specific gravity, is very often acid, and has little tendency to become alkaline: on the contrary, urine containing much mucus, if not alkaline when passed, speedily becomes alkaline and putrescent. Lastly, pus usually contains a little oily matter, which mucus does not.

The effects of alkalis on pus were, I believe, first pointed out by Mr. Cruickshanks, and these effects are occasionally of considerable importance in a pathological point of view. Thus urine containing both pus and mucus, sometimes becomes alkaline; and the ammonia evolved converts the pus into a peculiar glairy substance, which imparts to the urine a ropy consistence. This phenomenon, which is not very common, always denotes the presence of a purulent secretion, as well as disease of a mucous membrane: as has been recently noticed by Dr. Babington. I have, however, been acquainted with the fact for many years."

He has seen minute hairs in the urine, when any external source appeared highly improbable, and once he met with them in the pelvis of the kidney after death.

Substances that do or do not pass through the kidney.—It may, perhaps, be useful to mention these—useful we mean, in practice. Some substances pass but little changed. Such, for instance, is the hydriodate of potash, which may be detected in a very short time, in the urine of those who have taken it, by the aid of a solution of starch, and a few drops of nitric acid. Other saline matters said to pass through the urine but little changed, are the borate of soda, the alkaline carbonates, the chlorate of potash, the prussiate of potash, the nitrate of potash, the muriate of barytes, &c. &c. On the contrary, the mineral acids, the preparations of bismuth and lead, the oxide of iron, &c. are said by Berzelius and Wöhler not to pass through the kidneys. Among substances of an organic origin, some pass through the system readily, and appear in the urine, while others are decomposed. Of substances passing more or less readily through the system, may be mentioned, the gallic acid, (as in the *uva ursi*, &c.) also the succinic acid, the carbonic acid? &c. According to some, the citric, malic, and tartaric acids, pass through the kidneys; but this is denied by others, and Dr. Prout thinks with good reason. When combined with alkalis at least, these acids are invariably decomposed in their transit through the system. To the list of substances passing through the system so far as to impart to the urine their peculiar odour, more or less modified, may be added various essential oils and balsams, as turpentine, copaiba, and many others of this class; also the aromatic and colouring principles of coffee, onions, asparagus, &c. With respect to this last class of substances it may be remarked, that the phenomena takes place much more readily in dyspeptic, than in healthy individuals. Indeed the odour of almost every thing taken may be detected in the urine of dyspeptic and sedentary persons; and the circumstance may be considered as invariably denoting imperfect assimilation.

Dr. Prout recapitulates in a very useful Table, the details through which he has gone so circumstantially. The table we introduce.

TABLE,

Exhibiting a contrasted view of the relations between the principles of the blood and the principles of the bile and of the urine, formed either mediately or immediately from the blood.

BLOOD contains,		URINE contains,	
In health,	In disease,	In health,	In disease,
Water		Water	
Albumen	Gelatin	Urea (lactate of	Carbonate of ammonia
	equivalent to		
Fibrin	Albumen	{ Lactic acid Lithate of ammonia mucus	{ Oxalic acid, &c. Purpuric acid, &c. Xanthic oxide Cystic oxide Secretion of proterrate Pus Prussian blue Indigo ? &c.
Hæmatine Fatty matters		Colouring matter	{ Colouring matter of bile Biliary resin Cholesterine.
Lactic acid and its accompanying animal matters, (according to Herzellus.)		Lactic acid and its accompanying animal matters, according to Berzelius.	Free Lactic acid.
Sulphur, phosphorus, fluorine ? in incidental union with animal matters		Sulphuric acid, phosphoric acid, fluoric acid, all in combination, as salts.	Sulphur Phosphorus
Muritic acid in combination as salt.		Muritic acid in combination as salt	Free alkalies ?
Potash, soda partly in union with animal matters.		Potash, soda, in combination with acids, as salts.	Alkaline carbonates.
Lime, magnesia, (silic ?) in incidental union with animal matters.		Lime, magnesia, (silic ?) in combination with phosphoric acid.	Lime and magnesia in excess ?

Represented in the Crine by

In health,	In disease,
Water	
Pteromet ?	Albumen ?
Mucus	
{ Colouring matter ? Biliary resin Cholesterine	
{ Lactic acid (in combination) and its accompanying animal matters, according to Berzelius.	
Sulphur, phosphorus, fluorine ? in incidental union with animal matters.	
Muritic acid in combination as salt.	
Potash, soda, partly in union with animal matters and various acids.	
Lime, magnesia, (silic ?) in incidental union with animal matters.	

Represented in the Bile by

Dr. Prout takes care to observe that the preceding tabular view represents the phenomena as they *generally take place*—the *law* and *not the exception*. Of that tabular view he gives a sort of general account which we cannot but look on as important.

“The blood,” he says, “contains two different forms of the albuminous principle, one of which, the *albumen*, properly so called, is converted by the secondary assimilating processes into the *gelatinous* (or *saccharine*) and *albuminous tissues*; the other, the *fibrin*, into the *muscular tissues*.* The blood also contains an *oleaginous* principle. The other animal matters present in the blood are ill-defined, and considered by Berzelius to consist chiefly of the *débris* of the various tissues formed during the secondary assimilating processes. The albuminous principles of the blood, besides the hydrogen, carbon, oxygen, and azote, of which they essentially consist, contain also incidentally, various mineral matters of which sulphur, phosphorous, iron, calcium, and magnesium are the chief. The oleaginous matters consist of carbon in large proportion, with hydrogen and oxygen, but no azote. The saline matters in the blood consist chiefly of common salt, with soda in some loose state of combination, either with albumen, or other animal matters.

The *bile* contains very little azote; and no principle distinctly known to be analogous to albumen. The peculiar biliary principles (the colouring matter, the biliary resin, and the cholesterine,) contain a large proportion of carbon, and consequently resemble the oleaginous principles of the blood, which, therefore, they probably represent in part. The other animal matters existing in the bile appear to be ill-defined, and to resemble in some degree the ill-defined principles found in the blood. The saline matters in the bile contain relatively a larger proportion of soda than those of the blood; which soda seems to exist in union partly with the biliary principles, and partly with various acids supposed to be formed from them. The biliary principles, if we except cholesterine in certain forms of disease, do not crystallise, but exist in the bile as first secreted, in imperfectly organised forms.

The *urine* in health contains no albuminous matters; but it contains two principles, urea and lithic acid, in both of which azote is found in large proportion. The urea we suppose to be derived from, or to represent the gelatinous, the lithic acid, the albuminous forms of the albuminous principle. There is no oleaginous principle in the urine; but the colouring matter of the urine (mediately, perhaps, through the colouring principle of the bile) seems to be partly related to the oleaginous principles of the blood on the one hand, and to its colouring matter on the other; neither, if we except the lactic acid, does any form of the saccharine principle exist in healthy urine. The saline matters of the urine differ remarkably from those of the blood and bile. The sulphur and phosphorus which existed in the albuminous principle of the blood are converted in the urine into sulphuric and phosphoric acids. So also, the calcium and magnesium found in the same principles, exist in the urine, as lime and magnesia. The urine also contains ammonia, (derived from the decomposition of urea,) which is entirely wanting in the blood. Hence the number of oxidised and acidified principles found in the urine, as compared with those found in the blood, is remarkable, and places the functions of the kidneys in a very striking point of view.” ciii.

Dr. Prout infers that:—

* “There is reason to believe, that the colouring principle of hæmotosine, another modification of the albuminous principle, is intimately related to the colouring principles both of the bile and urine.”

First. "The liver is the organ by which the blood is depurated of the unassimilated and superfluous oleaginous matters; as well as of those portions of the blood deprived of its azote and vitality during the primary assimilating processes.

Secondly. The kidneys are the organs by which the blood is depurated of the unassimilated, superfluous, and effete albuminous principles, as well as the mineral matters incidental to these principles, or which are otherwise derived.

Thirdly. The neutral and alkalescent characters of the bile, and the oxygenated and acidulous characters of the urine, show that the general character of the actions going on in the liver and the kidneys are directly opposed to each other—in short, that the general action of the liver is of a negative, the general action of the kidneys of a positive character; and that one of these two important organs thus antagonistically related to each other, cannot be deranged without deranging the other.

Fourthly. The liver and the kidneys (as well as certain minor glandular apparatus) either in virtue of the polar arrangements above mentioned, or of some other (vital) property, must, in a state of health, possess the *function of selecting* from the blood those peculiar principles adapted for their respective operations; and of producing such further changes in them as the animal economy may require. The changes produced by the liver on the principles to be eliminated by that gland, are in some degree of an organising kind; that is, the principles separated retain some of their vitality for ulterior purposes; while the changes produced by the kidneys on the principles designed to be removed from the system by these glands, are, in a state of health, without exception, of a disorganising kind—that is, everything passed from the kidneys is denuded of its vitality, which is carefully retained as it were in the system. The liver, therefore, may be said to possess an *organising*, the kidneys a *disorganising function*. This deduction is illustrated by what takes place in diseases of the liver and kidneys. Thus, when the liver is diseased, its selecting and organising functions are impaired or lost; and instead of selecting, and further changing into bile those principles, which the welfare of the economy requires should be removed from the blood and employed elsewhere, such principles are retained in the system; or if they do pass through the liver and are separated by that organ, they are imperfectly adapted for their ulterior functions; and thus in both ways great derangements of the health are the consequence. Again, when the kidneys are diseased, their selecting and disorganising functions are impaired or lost; and the deleterious principles the blood, (e. g. the urea,) are no longer selected in preference for separation from that fluid; while the superfluous or effete albuminous principles, which in the healthy kidney would have been selected and converted into the lithate of ammonia, either remain in the blood, or pass through the kidneys unchanged.

Dr. Prout is confident that these inferences, duly understood and applied, will explain a great many of the phenomena of animal bodies, both in health and in disease.

Of Urinary Calculi.—We may just enumerate their varieties. They are, as our readers must be pretty well aware,—the lithic acid calculus; the lithate of ammonia calculus; the oxalate of lime calculus; the cystic oxide

calculus; the bone earth, or phosphate of lime calculus; the triple phosphate of magnesia and ammonia calculus; the fusible calculus, or the calculus composed of a mixture of the phosphate of lime and of the triple phosphate of magnesia and ammonia; the alternating calculus (comprising numerous varieties); the mixed calculus; the carbonate of lime calculus; the xanthic oxide calculus; the fibrinous calculus; the prostatal calculus.

The description of these calculi it is unnecessary for us to enter on. The student will be repaid by its examination.

This concludes the "Introduction" to Dr. Prout's volume and our present notice of it. We have been particular in our account of it; for, although some, indeed most of the views have been before the public at different times already they have not hitherto assumed so consistent a form, nor have they been developed into so complete a system. And this we will say, that whoever is unacquainted with them is not on a level with the knowledge of the day.

PERISCOPE;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

NOTICE OF "THE INVALIDS' GUIDE TO MADERIA. By. W. W. Cooper."

THERE are few situations more embarrassing to a medical man, than when he feels himself under the necessity of recommending his patients to resort to a distant climate for the restoration of health. For no one would hastily, or without due consideration, incur the responsibility of advising a person exhausted by disease and suffering to encounter the miseries of a sea voyage, and the discomforts necessarily attendant on a residence in a strange land—or, on the other hand, of recommending such an expedient where change of air was not essential to the safety of his patient.

Experience, however, has taught us that change of climate is the most powerful means we possess of arresting the progress of pulmonary, and other fatal maladies; and that where a timely removal is effected, the most beneficial results may, in a great majority of instances, be expected to follow. It becomes then an important part of the medical man's duty to be able to detect the primary symptoms of consumption, and other structural diseases, which are usually insidious in their approach; and, under ordinary circumstances, fatal in their termination. In pulmonary affections we fortunately possess an auxiliary in the stethoscope, by which we can detect organic changes in the chest, generally before the patient is aware of their existence. It is in these incipient stages of disease that the sanatory and restorative influence of change of climate is so particularly available: and if then had recourse to, no doubt the number of victims to consumption and other fatal maladies would be materially diminished.

Madeira has long and deservedly enjoyed a high reputation for the salubrity of its climate and the equality of its temperature: and in those morbid and cachectic conditions of the system to which we have adverted, a temporary residence there may be expected to produce the greatest benefit.

The author of the little work which has called forth these remarks, takes a similar view of the subject, and strongly enforces the necessity, as well as the great utility, of a timely retreat to this island.

"I would have all beware of delay where there is the slightest tendency to consumption. The approach of that disease is so insidious, its first symptoms so slight, that when judging from appearances alone, it may be said that the individual is only *threatened* with it, at that very time may the rudiments of disease not only be established, but even considerable progress made. When the experienced stethoscopist detects the least symptoms of a tubercular condition of the lungs, not a moment should be lost. The position of the individual is fraught with danger, but a timely retreat to such a climate as Madeira, may then be confidently looked forward to as a means of checking the impending danger, and cutting short the disease before it is too late."

The work is written in a very pleasing and agreeable style, and contains much useful information respecting the accommodation, expenses, the customs, and

amusements, &c. of the inhabitants; which will be read with great interest by all who visit Madeira either in search of health, business, or pleasure. The medical part of the book is somewhat meagre, and contains but little either of interest or of novelty. But the object of the author has evidently been to furnish (what has long been wanted) a cheap, useful and entertaining guide to Madeira; rather than to impart information to medical men: in this he has completely succeeded, and we cordially recommend his *vade mecum* to the notice of our readers.

ON DISEASES OF THE HIP-JOINT; WITH OBSERVATIONS ON AFFECTIONS OF THE JOINTS IN THE PUERPERAL STATE. With Plates. By W. Coulson, Surgeon to the Magdalen Hospital, Consulting Surgeon to the City of London Lying-in Hospital, Fellow of the Royal Medico-Chirurgical Society of London, Corresponding Member of the Medico-Chirurgical Society of Berlin, &c. &c. London, Longman & Co.

In his advertisement Mr. Coulson informs us that:—"The present edition of this work will be found to differ very materially in form from the first, and to have received considerable additions. The alteration in the arrangement I have adopted in deference to suggestions which appeared to me judicious, and with a view to make the work more readily available in practice. I have treated more fully than in the former edition of the affections with which the diseases of the hip may be confounded; and I have added a chapter (which may be of value for the cases it contains) on the puerperal affections of the joints, to which, according to M. Dugés, the hip is more than any other liable.

In my investigation of the diseases of the hip-joint, I regret that I have not yet been able to classify the inflammatory affections according to the structure primarily affected. During the last sixteen or seventeen years, I have not omitted any opportunity which has occurred to me of examining after death the morbid changes in the part. In all the cases I have examined, where the disease could be said to have been in its earliest stage,—the synovial membrane was inflamed, whilst the cartilages and bone were but very slightly affected at the attachment of the ligamentum teres to the head of the femur. In the other cases, all the structures have been involved in the process of disorganisation, and to such an extent as to preclude the possibility of determining to the affection of what structure any particular symptom could be referred. I have been obliged, therefore, to confine myself to a classification which I have thought useful for practical purposes, with a view to the different treatment which the patient may require."

We gave, in a former number, a pretty copious account of the first edition of this work. We shall not go over the same ground again. We shall merely allude to a few of the points introduced for the first time.

1. *Sciatica*.

We have a chapter upon this. We shall take a hint or two.

Three affections, says Mr. Coulson, each distinguished by particular symptoms, have been classified under the term *sciatica*. In the first the pain is confined to the hip-joint, and all the attendant circumstances clearly demonstrate that the complaint is purely rheumatic. The severity of the symptoms varies with the changes of the weather; when the patient begins to use the limb, the pain is intense, but it partially abates as the exertion is continued, and the heat and circulation of the parts affected are increased and stimulated by exercise. There is not unfrequently rheumatism in some other parts of the body; and if

we trace the disease to its origin, we shall find that its exciting cause was such as commonly gives rise to rheumatic affections in general.

With Cotunnus, Mr. Coulson divides sciatica proper into two species, according to the sciatic or crural nerves being the principal seat of the complaint.

The first is characterised by a fixed pain in the hip, chiefly behind the great trochanter, which extends upwards to the os-sacrum, and downwards on the outside of the thigh to the knee. The pain seldom stops at the knee, but often runs on the outer part of the head of the fibula, and descends to the fore part of the leg, where it pursues its course, along the outside of the anterior spine of the tibia, in front of the outer angle to the dorsum of the foot.

The second species of sciatica, on the other hand, is distinguished by a fixed pain in the groin, which runs along the inside of the thigh and leg, following, in fact, the track of the principal ramifications of the anterior crural nerve, as the other does those of the sciatic.

M. Guerin gives an account of a dissection of inflamed sciatic and saphenus nerves. The patient died of pneumonia. At the post-mortem examination the right sciatic nerve, from the lower fourth of the thigh, the tibial nerve, to the point where it passes between the gastrocnemii muscles, and the external saphenus nerve, in nearly its whole course, were inflamed.

The inflammation was characterised by a slight redness with serous infiltration, and a moderate degree of tumefaction of the above nerves, particularly of the saphena at its commencement. This nerve was at least double its natural size, of an uniform scarlet colour, and of a hard fleshy texture. In endeavouring to dissect the numerous fibres, both from above and below, towards this spot, they broke, and appeared to be involved in a spongy cord, which was infiltrated with blood, and resistant to the touch; a section of this cord showed nothing but small coagula of blood. In contact with the inflamed saphena nerve, below the gastrocnemii, was a collection of pus, rather effused into the cellular membrane, than enclosed within an abscess, and not penetrating the substance of the nerve.

The filaments of the sciatic and tibial nerves were separated, and as it were dissected, by means of infiltrated serum, to a considerable distance, both above and below the seat of the inflammation.

On the matter of treatment we see nothing to arrest us.

2. *Paralytic Affections of the Lower Extremities.*

A mother, says Mr. Coulson, brings her child to a surgeon with supposed disease of the hip: on inquiry he learns that the patient could not walk at the usual period; but that, when eighteen or twenty months old, or even at an earlier age, he was unable to stand, and that the child was at this time cutting the teeth. On examination of the limb, we find it wasted and apparently longer than the other, the nates of the affected side flat, and the temperature of the whole limb below the natural standard. When the child attempts to walk, it cannot raise the limb from the ground, but draws it along; and when it stands, the weight of the whole body is rested on the sound one, while that of the affected side is half bent.

The diagnostic mark of the disease is the absence of any pain in the joint. If we place the child on a table, and press in the neighbourhood of the articulation, or rotate the head of the femur, no pain is produced; whereas, in the disease of the hip, pain would be experienced.

After the period of dentition, the general health is little affected by this complaint; some years, however, commonly elapse before the child recovers much use of the limb.

The effects of this attack are not merely the partial paralysis of the limb, but sometimes considerable distortion. This for the most part makes its appearance

in the displacement of the foot from its natural position: certain muscles in particular are affected with paralysis; and the consequence is that the stronger set naturally prevailing, drag the foot in their own direction. If the paralysis affect principally the extensor set of muscles, the heel is drawn upwards, and the foot becomes clubbed; if, on the contrary, the flexors be paralysed, then the extensors prevail, and the foot may be either inverted or everted. The deformity in these cases frequently admits of being relieved by the division of the contracted tendons.

The means of treatment in this complaint consist in endeavoring to restore vigour to the motive powers. The atrophied limb should be assiduously rubbed two or three times a day: and the patient (if sufficiently old) should be made to exercise the muscles in maintaining and varying the vertical position. This sort of graduated exercise will slowly re-establish a certain degree of power of the weakened muscles, and eventually improve the tone of the entire system. In addition, the affected limb may be immersed in hot salt water for ten minutes daily, and active friction afterwards employed.

Great benefit will also be derived from medical treatment regulated according to the constitution of the patient. In some instances, leeches to the head or spine and brisk purgatives may be required, in others, on the contrary, steel, wine, quinine and other tonics, and electricity, will be necessary; but in all cases great perseverance must be exercised, both by the patient and medical attendant, as a long time elapses before any material improvement takes place, even under the most favourable circumstances. But though some benefit may be obtained, a perfect restoration of power and flesh to the wasted muscles can hardly ever be obtained.

"A paralytic affection of one or both of the lower extremities not unfrequently follows chorea when it has been of long standing. Cases of this kind are incurable, particularly if the intellect partakes of the general imbecility; but where the mind remains unimpaired, much may be expected from the adoption of judicious treatment. In addition to the treatment pointed out for the relief of sciatic paralysis, counter-irritants of a more powerful nature are to be employed; and they are more beneficial if applied on the tract of the spinal marrow. It may likewise be observed that chalybeate tonics are more indicated in this case than the preceding; and guaiacum is not so often useful. The bowels in both kinds of the complaint should be duly attended to; but in the latter very active purgatives are from time to time required.

A form of paralysis frequently accompanies hysteria, and that peculiar affection of the hip which has been deemed to be of a hysterical nature. Sir B. Brodie, in speaking of hysterical paralysis, says, that it has this peculiarity: it is not the muscles, in his opinion, that are incapable of obeying the act of volition, but it is that the function of volition is not exercised. How far this theory is well founded is a subject foreign to my present purpose to enter upon; however, the fact cannot be doubted, confirmed as it is by so many analogous examples; viz. that a great extent of muscular inability usually succeeds the cessation of the pain in the hip in this affection."

3. *Congenital Displacement of the Hip-joint.*

Mr. Coulson gives the following summary of the signs which distinguish this form of disease of the hip-joint.

1 In congenital lameness, the thigh is, from the first, shortened; in disease of the hip, on the contrary, in the first stage, no alteration from the natural length is perceptible; and afterwards the diseased limb is considerably lengthened before it becomes shorter. The shortening of the limb, also, which is observable in the last stage, is much more considerable than in congenital dislocation.

2. In this congenital malformation, the shortened limb (if the child be put in

a horizontal position, and the pelvis fixed with the hand) can, by gentle pulling, be lengthened without any pain; and it immediately becomes short as soon as the extension ceases; in disease of the hip, this is not the case; and the shortened limb cannot be extended without the greatest pain.

3. In the congenital dislocation, the nates of the affected side are either in their natural state or somewhat flatter than in the natural state; on the contrary, when the limb is lengthened, the nates are flat; but when the limb is short, they are tense and projecting.

4. In this malformation the shortened limb, with very few exceptions, is not at the same time thinner and wasted, as is invariably the case in disease of the hip.

5. The motion of the hip is, in congenital dislocation, as free as in the healthy state; the child, with the exception of the lameness, being well and free from pain; in disease of the hip, on the contrary, when the limb is once shortened, the motions of the limb are for ever impaired; the patient occasionally suffers from attacks of fever; and the disease, at least at these periods, is connected with paroxysms of pain.

6. In congenital dislocation, the child, when standing or walking, places the whole surface of the sole of the foot on the ground; those labouring under the disease of the hip rest only on the toes of the affected limb.

Mr. Coulson gives a very full account of the puerperal affections of the joints. We shall merely cite his opinion on their nature.

"The contamination of the blood, I must confess, appears to me the most probable explanation of the varied phenomena of these affections; they really seem, as has been recently expressed, to be the result of a poison 'not confined to certain structures, as the peritoneum or uterus, where its violence is pent up and exhausted, but diffused by the circulation over many organs, causing each to re-act after its own laws, and giving to the disease it produces a character of inextricable confusion and almost hopeless fatality.'"

And though, at one time, we were of a different opinion, we now think so too. We consider this a very much improved edition, and can recommend it strongly.

OBSERVATIONS ON THE SURGICAL PRACTICE OF PARIS. Illustrated by Cases. Being a Thesis, to which a Gold Medal was assigned by the Senatus Academicus of the Edinburgh University at the Graduation of 1840. By *W. O. Markham*, M.D. S. Highley, London: 1840.

AFTER all the intercourse between this country and the Continent, and after all the journalism of the last half-century, we still know very little of our neighbours, as of ourselves, and whatever improves our acquaintance with them is both instructive and amusing. But this we seem to have learnt—that practical utility is not the god of their idolatry, and that in medicine, or surgery, as in the arts of life, we are in *practice*, their superiors. Their merits are very great, but they are not of this description, and while we cannot but admire the ingenuity, the versatility, and frequent originality of the Frenchman, and the profound abstractions of the German, we must not be misled, however some may endeavour to mislead us, into disparagement and disregard of our own sterling attainments.

Dr. Markham observes:—

"The idea of making any comparison between the merits of the surgery of Paris and of England, never entered the writer's thoughts; and, he confesses freely, that a just and comprehensive decision of this question cannot, with propriety, be drawn from such an imperfect sketch as the following. He is led to make this observation, from remarks which he has already heard fall from those who have perused the manuscript. An attempt to decide such a question

cannot but be a task of difficult accomplishment, and one much beyond the writer's powers, and for the obvious reasons, that a lengthened residence in Paris, a discriminating observation, and an impartial and long practised eye, are absolutely necessary for the purpose, qualifications to which he cannot lay claim. Perhaps it might be lawful to doubt if the question ever could be fairly decided by an Englishman. There must be a brighter side in every view; and it is not impossible that the writer may have been, in some instances, only busying himself with the more sombre tints of the picture, or may have made even these darker than true justice demanded, and, at another time, introduced a shadow, where a light should have been found. In plain English, he begs his readers to remember, always, that this is, at best, but a partial view of the matter, written desultorily without any distinct purport, and during the residence of only a few months in Paris."

But let us take a glance at surgery in Paris. We will do our confrères justice, and quote what is for, as what is against them impartially.

Erysipelas prevalent in Paris.

Erysipelas prevails to a great extent in all the hospitals of Paris at all seasons of the year, but at intervals it rages with peculiar severity, attacking every even the slightest wound. The situation of an hospital seems not to afford sufficient cause for its occurrence; for during this winter (1839-40) it appeared in several at the same time, and indeed for many weeks bore the character of an epidemic in the different hospitals; and not only in the hospitals, for it was observed by M. Blandin, that at the same moment, and in an equal manner, it was attacking his private patients, subjects of operation. It is impossible to assign as a cause the great heat which is always maintained in the wards here, and the very faulty ventilation—for these circumstances always equally prevail; whether the season of the year may produce any effect, is not clear, but it was prevailing most particularly last year in the Edinburgh Infirmary, during the same months that it was most violent in Paris during the present year 1840, namely, in February and March.

During these months, in M. Blandin's wards, at the Hôtel Dieu, an attack of erysipelas followed every operation, even the simple puncture of a lancet; and, as no operation was ever delayed through fear of its occurrence, the observation was the more evident.

This will be found to be the case, more or less, in all large towns. Weather, no doubt, exercises a great influence—more occult states of atmosphere probably do so too.

M. Blandin's Crotchets about Erysipelas, and Sangrado Treatment.

"I said before that M. Blandin never delayed any operation in consequence of the greater prevalence than usual of erysipelas in his wards; and this circumstance must be referred, I apprehend, in some degree to the great confidence which this gentleman has in his mode of combating the disease. He considers erysipelas as an inflammation consisting of two elements—inflammation of the lymphatics, and inflammation of the skin; and avers, that the former invariably precedes the latter, and that, when the inflammation of the skin is apparent, the disease has already made much progress. Upon these ideas his treatment is entirely based; and when the constitutional symptoms, as rigors, vomitings, nausea, &c., indicate an attack of erysipelas, M. B. invariably prescribes the application of leeches in great number, in the neighbourhood or course of the lymphatics, *between* the wound, or part affected, and the trunk: thus in an injury of the foot, leg or thigh, the leeches are applied to the groin—of the arm, to the axilla—in threatened erysipelas of the head, to the region of the cervical glands—in a wound of the chest, or, after excision of the mamma, to the axillary and cervical glands—in wounds near the anus, to the groin. Of the efficacy and propriety of this treatment, a great many cases, which I wit-

nessed, seemed to bear evidence. But it also appeared to me, that the very high faith which M. B. proposes in it makes him carry it too far, and use it too exclusively : it seemed sometimes difficult to say, if extensive sloughings, gangrene, and even death of the patient, were not as much to be attributed to the continued application of leeches, loss of blood, and consequent enfeebling of his system, as to the intimate nature of the disease itself ; and it is not difficult to conceive, how prejudicial must be this treatment in old, worn constitutions, in individuals enfeebled by disease, or whose powers are prostrated by loss of blood, consequent on operations. Another objection to this treatment is, that it often induces the very ill it is meant to combat ; thus, in a case of erysipelas of the hand and wrist, arising after extraction of the metacarpal bone of the thumb, I have seen violent inflammation follow the application of leeches, along the course of the absorbents in the arm, and axilla, and this inflammation has spread to the trunk, and produced death,—at the same time every trace of erysipelas disappearing from the hand and wrist.

I could not feel convinced, also, that inflammation of the lymphatics precedes always that of the skin, for I did not see it demonstrated clearly. This treatment M. B. insists upon most particularly ; but I cannot say that it was more successful than many other methods employed, as anointing the part, by M. Velpeau, &c."

We, in London, need not say how baseless M. Blandin's theory is—how outrageous his treatment.

Carelessness with respect to Sponges.

Any one who has been accustomed to observe the strictness maintained in most English hospitals, to prevent the possibility of any contagious matter being conveyed from one patient to another, through the means of sponges, &c., would be not a little surprised to find the utter disregard which prevails here (at Paris) as to this circumstance : the same sponge which cleans a bubo or a chancre at one bed is carelessly rinsed, and then employed to dress a stump at the next, and in the same manner makes the circuit of the ward. I could never see that sponge squeezed upon a wound, without thinking of the opening of Pandora's box ; and I cannot but feel persuaded that I have seen many inflammations, and their severe consequences, which have had at least a very probable origin in this promiscuous intercourse of the sponge.

How hard it is to operate for Hydrocele.

"Although the operation for the radical cure of hydrocele may be considered as one of the simplest operations in surgery, there is not one perhaps in which more accidents have happened during its performance ; and I should imagine from what I have seen and read, that there are very few surgeons in large practice who have not sometimes in their life made some faux-pas in this operation. The cause of these mishaps it has several times appeared to me, might perhaps be sought in the very simplicity of the operation itself, which may induce the operator to be somewhat less careful than ordinary in its performance. A collection of the various accidents which have happened in the hands of different individuals in the performance of this operation would form a curious history.

So frequently have these accidents occurred in the practice of some of the Parisian surgeons, that I have heard M. Ricord state, that he believes a kind of atmosphere surrounds the surgeon ; a fatality always attends him during the performance of the operation for hydrocele, and that so impressed was Boyer with the truth of this, that he refused to perform it during the latter times of his practice. The principal accidents which happen during the operation are, pushing the trochar into the testicle, injecting into the cellular tissue of the scrotum instead of into the tunica vaginalis, and injecting into the tunica vaginalis when the abdominal rings are not closed.

I have seen M. Blandin do the first ; thrust the trochar into the testicle in a

small hydrocele, and where, by the aid of a light, the testicle, could be distinctly seen lying at the back of the scrotum; on withdrawing the trochar, no liquid escaped, and examination, with a light, showed the trochar sticking in the testicle—of course no injection was thrown in—a violent inflammation, however, followed, abscesses formed, and incisions were made into the scrotum to give issue to the matter; the patient, however, after some weeks perfectly recovered. M. Ricord observed, that once, in a great hurry, he sent the trochar right through the testicle of a barber; he saw his error, and reflecting for a moment on the frequency with which these mischances on the testicle terminated without bad results, he, after evacuating the fluid, did not hesitate to inject the tunica vaginalis, the trochar, still perforating the testicle; and luckily the barber was cured, without a bad symptom. I should think a prudent surgeon would have equally condemned M. Ricord's hurried practice in the first stage of his operation, as his proceeding in the second: he observed that he had often seen the testicle touched, and not a bad consequence of any kind result. Perhaps the most common error is throwing the injection into the cellular tissue, and this error does not seem to be merely the consequence of the canula having slipped out of the tunica vaginalis, for I believe that I have seen the water of a hydrocele drawn off without the *canula* having entered the tunica vaginalis, which accident might happen either through the maladroitness of the operator, or by reason of the canula not fitting accurately to the trochar. It is not at all difficult to understand how the fluid may escape *from* the hydrocele, when the trochar has *alone* entered the distended sac, and the canula never penetrated it, and how almost impossible it is for the injection to find its way into the contracted sac, or into any part but the cellular tissue. It is clear that this mistake may happen without the surgeon having for a moment permitted the slightest movement of the canula in an outward direction, and may be the cause of no little surprise to the operator, who feels convinced that the canula has never quitted the sac—which, in fact, it has never entered. One of the most curious points in the history of this misadventure is, the very different degrees in which the injury is resented. The natural conclusion of the consequence of an irritating injection thrown into the scrotum, is violent inflammation, and its destructive sequelæ; but, most happily, theory is not always verified by practice in this instance. I have seen in England four ounces of port wine and water injected into the scrotum of an old man of sixty years, and not above a dozen drops return through the canula, and yet the man recovered, without a single bad symptom. M. Ricord threw the injection he generally uses (a solution of iodoine) into the scrotum of a young man at the Hôpital du Midi: not one drop ever returned, nor could the most minute examination discover where it was lodged: the expectant treatment was adopted, and, to the utter amazement of all, not the slightest bad result ensued. M. Ricord said, that it was not the first time, by many, he had seen the same mistake, and the same happy consequence; and mentioned the circumstance rather as a good joke, than as a warning to his auditors."

It is painful to use harsh expressions, but we ask any candid English surgeon whether this is right or decent? Surely the recklessness with which mistakes are incurred, and the sang-froid with which their results are spoken of, evince a disregard of human suffering and human life that ought to meet with the severest reprehension. It is bad in every point of view—bad because it evinces callousness of feeling—bad because it generates indifference to consequences—and while it lowers the moral tone of the professional mind, it interferes with the success and consequently with the real objects of medical science. One reflection must be uppermost in the thoughts of all men of judgment and humanity. Is this the school where our youth are to be trained—is this the source whence English practitioners are to be instructed? We are often invited to turn to the Continent—to yearn after the rich stores of medical knowledge locked up in foreign tongues—to doff our native modes of thought and practice

and assume the newer ones of strangers. But those who have paid most attention to the continental schools, have lately drawn less flattering pictures, and couched us of our admiration of the flashy, but the flimsy accomplishments they boast of.

Are French Records of Cures to be depended on?

Our author touches lightly but significantly, on this subject, yet the suspicion he gives utterance to does not originate with himself. It is one that has been widely entertained and not unfrequently expressed.

"One cannot suppose, however, that since accidents of this nature are anything but rare, all terminate thus favorably. Unluckily the annals of medical science contains much oftener the victories than the reverses of its cultivators; for self-love too strongly puts a seal upon the latter, and I do not know if the French medical records are not peculiarly obnoxious to the reproach of this remark; at all events, the analysis of their practice does not always give results consonant with the conclusions they deduce from it."

Injection of Congenital Hydrocele.

"One can hardly imagine, how such an error could be made, as injecting a hydrocele, while the mouth of the sac is unclosed—but yet it does sometimes occur. M. Ricord once injected a quantity of wine into the peritoneum, without a shade of a bad result, and he mentioned, that he remembered M. Richerand having done the same thing. Dupuytren says, that this accident has frequently happened,—in one case, induced peritonitis and death: he does not say whether in his own practice or not. I have seen M. Roux inject, in a healthy subject, wine into a sac communicating with the peritoneum, firm pressure being made by three assistants on the canal, and no accident follow. I should observe, that M. Roux did not discover his error of diagnosis, until he had commenced the operation, and was apprized of it by the great quantity of fluid which passed by the canula; and I know not for what reason he afterwards deemed it a case where the sac continued high up into the abdomen, and not communicating with the peritoneal cavity! that it did communicate, the abundance of fluid which escaped seemed to me an evident proof."

M. Ricord appears to commit a very respectable number of blunders, and those not at all little ones.

Time-keeping Surgery at the Hôtel Dieu.

The injecting of hydroceles, as performed by MM. Roux and Clandin of the Hôtel Dieu, does not seem to me to be at all guided by scientific principles; or rather, the operation, as to its data, is perfectly incomprehensible, and is only to be accounted for by custom, which in Dupuytren's time always commanded, that the injections for the radical cure of a hydrocele should be three in number at intervals of three minutes each. The above gentlemen practise two injections of warm wine. Modifying the above usage, M. Roux also times the interval in every operation between each injection: the age of the patient, his disposition, his sensation of pain (and the difference of *this* in different individuals is most remarkable), are totally disregarded by him, and the operation is conducted on strictly horological principles. One may be permitted to express surprise that such self-evident errors should be every day repeated before so many observers. If the weak French wine is not irritating enough to produce sufficient inflammation when only once injected, one would have thought that the simple conclusion would have been to seek a more irritating injection, in order that one injection might suffice—that the operation might be simplified and expedited—and, above all, that the double danger of throwing the injection into the cellular tissue might be avoided. Surely, the surgeon who had withdrawn one injection safely, should be too happy at the event. The timing of the process can be no less erroneous. In short, it is clear, that the prejudices of the schools are not altogether destroyed in the performance of this operation.

Barbarous Operation for Anchylosis.

We really, though far from squeamish, sickened while we record the following.

A woman 45 years of age, under M. Blandin's charge at the Hôtel Dieu, had been affected with anchylosis of the knee for ten years, an anchylosis consequent on white swelling. The leg was very much flexed upon the thigh, forming an acute angle with it; motion was almost entirely destroyed; but on rubbing the parts together forcibly, a slight crackling was heard and felt. The back of the condyles, and *not* the lower surface of the femur, rested on the tibia, and the patella was forced on the under surface of the femur, and appeared fixed and united there. All the parts which surrounded, and entered into the composition of the joint, were retracted. Such was the condition of this woman's knee when she presented herself for relief. Her health was good, and she was willing to undergo any suffering, even amputation of the limb, rather than submit to the endurance of this impediment, which rendered her life (always hitherto an active and industrious one) burdensome.

It was evident, that all the simple and ordinary methods employed for the resolution of anchyloses, were futile in respect to this case, both by reason of the long period of the existence of the malady, and its extent. So grave an operation as amputation, M. Blandin thought was inadmissible, though I believe in like cases it has occasionally been performed at the request of the patient.

After some discussion, it was at last determined, at the particular request of the patient, and after many pressing instances from M. Louvrier, that this gentleman should be permitted to practice his operation (which was much the subject of discussion in Paris at the time) on the knee, though still much against M. Blandin's opinion.

The object of M. Louvrier's operation is, by the aid of powerful machinery, to extend the anchylosed joint, disregarding utterly all impediments, and the nature of these impediments. The apparatus employed, it is impossible to describe, as it is of infinite complexity, and requires much time, labour, and dexterity to arrange; but the principles of its action is plain: The thigh is made a fixed point, and extension is applied to the leg by the aid of the two mechanical powers, the screw and the lever, sufficient to reduce the limb from its highly flexed, to perfectly extended position. What is going on in or about the joint, during the operation, it is impossible to observe, as the whole limb is thickly enveloped in coverings of brass, leather, &c. &c. When the apparatus is adjusted, all that is visible is the limb thus covered, placed in a wooden case, and resting in a kind of groove, where it slides as it is extended. The operator places himself at the foot of the apparatus, and turns a small wheel, which acts on the leg through the medium of a very strong catgut cord attached to different parts of the leg; the limb gradually redresses itself, and in about two minutes it is perfectly extended. The pain suffered by the patient seemed excessive, and was prolonged by reason of the apparatus breaking in some part during the first attempt. What the force applied was I do not know, but it must have been very great. On examining the limb, when the apparatus was removed, the patella was found free, and the tibia almost entirely thrown *behind* the femur. Conjecture alone could give information as to what had taken place inside the joint. The skin was not torn near the joint, but it was at the heel. Every precaution, after the operation, was taken to anticipate the violent inflammation which might be expected to arise, by the application of leeches, &c., and by placing the limb in a perfectly immoveable position. By these, and other antiphlogistic means, the violent constitutional symptoms that arose were subdued, and she (the patient) seemed to rally from the low state into which she had fallen. But it was only an appearance of return to health, and she gradually sunk into a desponding state. The pain in the knee was constant, her nights were often sleepless, her appetite not good, pulse quick, and extreme pallor of the face. She thus continued till she left the hospital, about five months

afterwards. The limb then was perfectly useless, and always painful, and could not sustain the slightest pressure of the body ; and this woman evidently seemed sinking from some cause, when she demanded her dismissal. It was difficult to give the precise state of the knee, as it was, and had been all along from the time of the operation, enveloped in the starched bandage.

Two other operations of this nature were performed shortly afterwards, on patients of M. Velpeau at La Charité ; one died fifteen days after the operation it was said, of peritonitis ; the other, after a rather longer period. At Hôpital Neckar, another case terminated fatally, through gangrene, I believe, of the limb ; and M. Roux mentioned a case where he was called in to perform an amputation of the thigh, which had been fractured in a young man during M. Louvrier's operation.

Several other cases were mentioned in the journals as occurring in hospital and private practice, and with different success as to their results.

Comment on such ignorance and barbarity is superfluous.

MR. HAWES'S MEDICAL REFORM BILL.

The Bill before us came before the public after the latter portion of our Journal closed. We are under the necessity of introducing it here and displacing, on account of it, some Notices of New Works. The Bill having a present application and interest, this will not, perhaps, be regretted.

A Bill to amend the Laws relating to the Medical Profession in Great Britain and Ireland.

1. *Preamble*.—Whereas it would tend to the advantage of the public to alter and amend the laws touching the medical profession, and to make due provision for the prevention of persons, not being duly qualified, from practising the art of medicine, and to provide that all persons before practising the same shall be duly examined, as to their skill and knowledge, by learned and competent persons, and thereupon be permitted to follow and exercise the art of medicine in any part of the British dominions.

2. *Interpretations*.—Be it therefore enacted, That in this Act the words, “art of medicine” include within their meaning the recommending, prescribing, or ordering, either directly or indirectly, any medicine, remedy or application, whatsoever, for the relief or cure of any disorder, ailment, or illness of the body or mind, or any part thereof ; or performing any surgical operation, minor or capital ; or practising midwifery ; and the words “medical practitioner” mean a person qualified under this Act to practise the art of medicine ; and that the words “chemist and druggist” mean a person who shall sell, deal in, mix, or dispense for sale, any drug or medicine for the cure or relief of any bodily disorder, ailment, or illness, except such person as shall have obtained a certificate to practise the art of medicine ; and the word “England” shall include Wales.

3. *The Registrars of Medical Practitioners*.—And be it enacted, That the Secretary of State shall, within three months from the passing of this Act, appoint three persons to be registrars, one for England, to have his office in London ; another for Scotland, to have his office in Edinburgh ; and the third for Ireland, to have his office in Dublin ; and also such clerks as the said secretary shall deem necessary for carrying this Act into execution, until the election of the first councils hereinafter provided : the said Secretary of State may also remove any person so appointed. Before the election of the said councils all expenses for carrying this Act into execution shall be paid by the lords of the Treasury out of any monies received by the said registrars by virtue of this Act.

4. *Persons already qualified to Practice Medicine*.—And be it enacted, That the registrars shall, within thirty days after their appointment, distribute certificates to practise medicine, according to the form annexed, to every person who

shall apply for the same, and who shall produce his diploma, certificate, or license to practise medicine or surgery, dated prior to the passing of this Act, granted by any English, Scotch or Irish university, college, hall, or other person or corporation legally entitled to grant the same at the time of the passing of this Act, and also to every person who shall apply for the same, and who was actually practising medicine in England prior to August, 1815; but the said registrars shall grant such certificate for that part of the kingdom only for which they shall severally be appointed to act.

I authorise [Thomas Johnstone] of [15, Cavendish-square], to practise the art of medicine in England (or Scotland or Ireland) until February 1, 1850.

5. *Expense of Certificates and Registers of Practitioners.*—And be it enacted, That every person applying for a certificate to practise the art of medicine shall pay for it to the registrar the sum of [], and be subject to the like payment annually. The certificate shall bear date on the day on which it is granted, and continue in force until Feb., 1 1843; and the said registrars shall, at any time during one month preceding the 1st of February in every year, grant such certificates, and also to such other persons as shall be entitled to them, to take effect from the date thereof, and continuing in force until the 1st of February in the year next following that in which they are granted; and each registrar shall register in a book every certificate which he grants, and in February of every year shall print a list of all persons to whom he has granted such certificates prior to the 1st of February for the year ensuing, and of their places of abode; and the persons only whose names are contained in the last printed medical lists shall vote at any election held for the purposes of this Act. Copies of such medical lists shall be furnished to any person for sixpence each copy.

6. *Councils, and who shall elect them.*—And be it enacted, That on the 1st of June, 1842, and once in every three years, the medical practitioners registered and resident in England, shall elect a council for England; those in Scotland shall elect a council for Scotland; and those in Ireland shall elect a council for Ireland; twenty councillors for each council, who, in three whole years, shall go out of office, each councillor being capable of being re-elected.

7. *Who shall recommend the Councillors, and how.*—And be it enacted, That forty days previous to each election any such voter may transmit to the registrar a paper, as annexed, signed by six or more voters, containing the names of any persons he may wish to be elected as councillors, and the registrar shall print all such names together (unless they be members then going out of office) with the names of the persons recommending him, and only persons so nominated shall be eligible to be elected.

8. *Places of Elections.*—The elections shall be held at such places as the respective councils may appoint, within four miles of the General Post-office in London, within two miles of that office in Edinburgh, and within two miles of the same in Dublin; and the registrars shall give public notice of the times and places in the newspapers ten days before the elections. The first election shall be held at such places as the registrars shall appoint.

9. *Place, Time, and Mode of Voting.*—The elections shall be held before the registrar, commencing at 9 o'clock A.M., and closing at 4 o'clock P.M. of the same day, and every voter may vote for the whole number of councillors to be chosen, by delivering to the registrar or his deputy a voting paper according to the form annexed, in the Schedule, folded or sealed up, so that the contents cannot be seen, containing the names of the persons for whom he votes; or if sent by post, then the said voting paper shall be inclosed in a declaration, according to the form annexed; and the registrars shall transmit to every voter, fourteen days before the election, one voting paper and declaration to be returned, filled up, to the registrar on the day of election, to be opened according to the provisions hereinafter made.

10. *Who shall conduct the Elections.*—After the said election the registrar shall proceed to examine the voting papers to ascertain who are elected, and the twenty

persons who have the greatest number of votes shall be the councillors elected; in case of an equality in the number of votes for any two or more persons, the respective registrars shall publicly draw by lot from among those having an equality of votes, as many names as may be necessary to complete the whole number of councillors to be elected; and the names of the council shall be published in the London, Edinburgh or Dublin newspapers having the largest circulation, in seven days after such election; and each of the past councils shall, after the year 1842, appoint two or more councillors, to see and certify that the said election has been fairly conducted. At the elections for councils in 1842, the Secretary of State shall appoint two persons to superintend the election.

11. *Existing Medical Colleges and Corporations.*—And be it enacted, that the University of Oxford, in convocation assembled, and the Senates of the Universities of Cambridge and London, and the Fellows of the London College of Physicians, and the Council of the London College of Surgeons, and the Court of Assistants of the Apothecaries' Society in London, shall, if they think fit, severally appoint one fit person to be a member of the council for England; and the Faculties of Medicine in the Universities of Edinburgh, Glasgow, St. Andrew's, and Aberdeen, and the Councils of the Edinburgh Colleges of Physicians and Surgeons, and of the Glasgow Faculty of Physicians and Surgeons, shall, if they think fit, severally appoint one fit person to be a member of the council for Scotland; and the Provost and Fellows of Trinity College, Dublin, and the Councils of the King's and Queen's College of Physicians in Ireland, and the Dublin College of Surgeons, and the Dublin Court of Apothecaries' Hall, shall, if they think fit, severally appoint one fit person to be a member of the council for Ireland.

12. *Future Registrars.*—Upon any vacancy in the office of registrar the several councils shall appoint another registrar; or, failing so to do, the Secretary of State shall appoint one.

13. *Removal of Registrars—New Registrars—Deputies.*—The council of each kingdom respectively may remove any registrar for neglect, misconduct, or infirmity of body or mind; and in the event of the office being at any time vacant, such vacancy shall be advertised in newspapers of the largest circulation within the kingdom to which he acted, six weeks previous to the day for electing a successor. Candidates shall give notice of their intention to the council fourteen days previous to the election. If any registrar is absent, or incapable for a time the president of the council shall appoint a good deputy to act for him.

14. *Officers under the Act.*—On the 14th of June in every year each of the councils shall elect, by ballot, a president of their council for one year; and if he die, or cease to hold the office, the council shall, within ten days, elect by ballot another president for the remainder of the year; and shall also appoint a treasurer, not being a member of the council; and also three auditors of the accounts of the council; and also their own clerks and other officers. The council may remove the treasurer, clerk, officer, or servant so appointed, and appoint other persons to fill those offices when vacant; and shall fix the salaries of the registrar, treasurer, and others so employed; and also such remuneration to the individual members of council for the execution of their duties as they shall deem reasonable.

15. *Meetings and voting of Councils.*—All acts of the councils may be decided upon by the majority present, the meeting consisting of not less than a majority of the whole council. The president, if present, shall have a casting vote. The meeting of any council shall be notified three days beforehand, by summons sent to the abode of each member.

16. This clause provides for the holding of *special meetings*.

17. *Monies of the Council.*—All monies, fees and dues belonging to the council, shall be paid to the treasurer, and carried to the account of a fund to be called "the medical fund" and applied towards the payment of all expenses in-

curring in carrying this act into effect ; and in case " the medical fund " shall be more than sufficient for these purposes, the surplus may be applied from time to time towards the encouragement and advancement of medicine, and of science and literature connected therewith, as the senate hereinafter mentioned, and council conjointly, shall think most desirable.

18. *Payments.*—The treasurer shall pay no money out of the fund, save upon the order of three or more members of the council, countersigned by their registrar, except as hereinafter provided.

19. *Accounts.*—The treasurers' and registrars' accounts shall, in June and December in every year, be properly audited and published, along with the current medical list.

20. *The councils when at Law.*—The councils may sue and be sued in the name of their registrar for the time being, who shall be deemed plaintiff or defendant in every such suit or action : provided also, that the registrar, although appearing as plaintiff or defendant on the record, may, if not otherwise interested or objectionable, be a witness in every such action or suit.

21. *Election of a Medical Senate.*—And be it enacted, That each council shall, within thirty days next after their election in 1842, and in the December of every fifth succeeding year, elect by ballot from amongst themselves, or others three persons, who shall be called " the Medical Senate of Great Britain and Ireland," and continue in office five years. Vacancies in the senate shall be filled up by the councils for the remainder of the five years. Members of senate shall be capable of being re-elected.

22. *Its Registrar.*—The registrar for England shall be the registrar to the senate.

23. *Meetings of the Senate.*—The senate shall, on the 10th of July in every year, meet in London, at the usual place of meeting of the council for England ; and all reasonable expenses of the members of the senate attending any such meeting, shall be defrayed out of the " medical fund " of the respective councils. (The rest of the clause provides for the holding of special meetings of the senate at the desire of any two of the councils.)

24. *A majority of the whole senate must be present, and assenting to meetings and acts of the senate.*

25. *The President.*—At the annual meeting of the senate, it shall elect by ballot its own president for one whole year. A vacancy to be supplied, in the same way, for any portion of the twelve months.

26. *Privileges of Senators.*—Any member of the senate may be present at any meeting of the councils, and take part in its discussions, but not vote there ; and also be present at any examination held by any examiners appointed under this Act.

27. *Expenses of the Senate.*—All expenses of the senate (excepting the expenses of its members attending the same as hereinbefore provided) shall be divided into three equal portions ; and the senate shall make an order, signed by three of its members and countersigned by their registrar, for the payment of the one such portion upon each of the treasurers of the several councils, who shall pay the sums expressed in such orders out of any monies coming into their hands by virtue of this Act.

28. *By-laws relating to Medical Education and Examinations for Diplomas.*—And be it enacted, That the said senate shall make such by-laws for the United Kingdom, regulating in all respects the education of candidates applying to be examined for a diploma of qualification to practise the art of medicine, or to carry on the trade and business of a chemist and druggist, and also regulating the examination of persons prior to the granting of the said diploma, as from time to time shall to the said senate seem proper ; and such persons only as shall comply with such by-laws, shall be admitted to such examinations. But no such by-law shall be of force until forty days after a copy thereof shall have been published in the *London Gazette*, and another copy thereof sent to one of

her Majesty's principal Secretaries of State for the time being ; and if at any time her Majesty, with the advice of her Majesty's privy council, shall disallow such by-laws, or any part thereof, such by-laws or the part thereof, so disallowed, shall be null and void. If the senate neglect to publish any such by-laws within twelve months, the Secretary of State shall make and publish them ; provided also, that any such by-laws shall not be valid unless they require that previous to the examination of any person desirous of obtaining a diploma of qualification to the practice the art of medicine, he shall *produce a diploma, certificate, or letters testimonial, of having taken a degree in medicine, or of having passed an examination in medicine or surgery before some university, college, hall, or other persons, legally entitled to grant a diploma, certificate, or letters testimonial, at the time of the passing of the Act.*

29. *New Pharmacopœia.*—And be it enacted, That the senate shall cause their registrar to publish, under their direction and authority, a book containing a list of medicines and compounds, and the manner of preparing them, together with the true weights and measures by which they are to be prepared and mixed, &c. to be called "*The British Pharmacopœia ;*" and that the senate may alter and amend such Pharmacopœia as often as they shall deem necessary ; and every chemist and druggist shall mix, make, and compound, according to the directions therein contained, and according to no other formula, and obey in all respects the orders therein directed.

30. *The only future Medical Practitioners, Chemists, and Druggists.*—And be it enacted, That no male person whatever shall, from the 1st of February, 1842, practise medicine for remuneration, directly or indirectly, in any part of the United Kingdom unless he has obtained a certificate to practise the said art according to the provisions of this Act ; nor shall any person from the 1st of December, 1842, carry on the business of a chemist and druggist in any part of the United Kingdom unless he has obtained a licence under this Act.

31. *The present Licencing Bodies.*—And be it enacted, that after the publication of the by-laws for regulating the examinations for diplomas to practice medicine no corporation nor any university, except under this Act, shall grant any diploma, certificate, or licence to practice medicine, or to carry on the trade of a chemist or a druggist in any part of the United Kingdom of Great Britain and Ireland.

32. *Examiners and successful Candidates.*—And be it enacted, That each of the councils shall appoint annually fit persons to be examiners for granting diplomas in medicine, or licenses to carry on the business of a chemist and druggist ; and such examiners shall examine as the senate may direct, all candidates who may prove to be duly qualified according to the by-laws of the senate, and report the result of the said examinations to their respective councils, who shall direct their registrar to grant a diploma to practise medicine, or carry on the trade of chemist and druggist according to the forms annexed, to every person whom the council shall deem qualified, upon the payment of [] for such diploma ; and every person who shall have obtained such diploma may obtain from one of the registrars a certificate or license to practice medicine, or trade as a chemist and druggist, and to renew it annually ; and no person, except as herein provided, shall receive such a certificate or licence unless he pass such examinations aforesaid.

33. *Navy and Army Surgeons.*—Every person desirous of being appointed medical officer in her Majesty's army or navy shall be eligible for such appointment upon obtaining a diploma of qualification, or certificate to practise the art of medicine, and, while actually employed on her Majesty's service, shall not be liable to renew it annually.

34. Dentists or cuppers now in practice shall before the 31st of December, 1842, send a declaration as annexed to that effect, signed by themselves and two substantial householders, to the registrar, and shall obtain a certificate giving them leave to practise still what they practised before.

Declaration of Dentists and Cuppers.

I, A. B., of C., in the county of D., hereby declare that I was practising as a (dentist or cupper) in the county of D., previous to the 1st day of []
(Dated and signed).

35. And be it enacted, That each registrar shall grant a licence to carry on the business of chemist and druggist, according to the form annexed, to every person who has received a diploma of qualification from either of the councils, upon the payment of the sum of [] for such licence, to be renewed annually, on the 30th day of November: and each registrar shall register every licence which he grants as aforesaid, and publish the same in his medical list; and also the registrar shall grant the same to persons already, before the passing of this Act, carrying on the trade of chemist and druggist, or persons being assistants or apprentices, and applying within twelve months to the registrar for the same, and these persons are not to renew it annually unless they desire: provided always, that if any person as aforesaid shall *once* renew his licence as aforesaid, it shall not be lawful for him to carry on the trade and business of chemist and druggist unless he continue to renew it annually.

Licence to carry on the Trade and Business of Chemist and Druggist.

I, A. B., by virtue of the powers vested in me by an Act of Parliament passed in the year of the reign of her Majesty Queen Victoria, authorize C. D. of to carry on the trade and business of a chemist and druggist, in that part of the United Kingdom of Great Britain and Ireland called until the 31st day of November, 18

Dated and signed by the medical registrar.

Licence to carry on the Trade and Business of a Chemist and Druggist.

I, A. B. by virtue of the power vested in me by an Act of Parliament, passed in the year of the reign of her Majesty Queen Victoria, hereby authorise C. D., of to carry on the trade and business of a chemist and druggist, he having signed a declaration that he was engaged in the said business previous to the passing of the said Act.

Dated and signed by the medical registrar.

Declaration of Chemists and Druggists.

To the medical registrar for

I, A. B., of , hereby declare that I was previous to the day of 18 , at . Dated and signed.

36. *Medical and Chemical Assistants and Apprentices.*—And be it enacted, That every medical practitioner, and every chemist and druggist, having any assistant or apprentice in his employ shall, before the 31st of December in every year, transmit to the registrar the name of such assistant or apprentice, according to the form annexed, together with a declaration in writing, signed by himself, according to the said form; and the registrar is required to register in a book the names of the persons so transmitted to him, and insert them in the medical list published next after the receipt of such declarations; and be it enacted, that no medical practitioner shall, after the 31st day of December, 1842, employ any person as an assistant who does not possess a diploma of qualification, or a certificate to practise the art of medicine; and no chemist and druggist shall employ any person to assist him in the actual vending of drugs and medicines who does not possess a diploma of qualification to carry on the trade and business of a chemist and druggist, or a licence according to the form above, unless such persons so being assistants to any medical practitioner or chemist and druggist shall be apprentices for any period not exceeding seven years, and duly registered: provided always, that any person being an assistant to any medical practitioner, or to any chemist and druggist, shall not be required to take out his annual certificate or licence during the time he shall be so actually employed.

Declaration of Assistants and Apprentices.

To the medical registrar for

I, A. B. of declare that I have in my employ [Insert christian and

surname; age; whether assistant or apprentice; if apprentice, date of indentures; if assistant, date of diploma; and I request that you will duly register the same. (Signed)

N. B.—The person making such declaration must state whether he is a medical practitioner or a chemist and druggist. This declaration must be sent to the registrar before the 31st of November annually.

37. *Power and Privileges of Medical Practitioners.*—And whereas certain powers, benefits, privileges, appointments, acts and things, have, by custom, law, or right, been conferred on, or executed, or performed by physicians, or surgeons, or apothecaries, be it therefore enacted, That from and after the 1st of February, 1842, every power, privilege, appointment, and authority, heretofore held by any physician or surgeon, or apothecary, by any law, charter, or custom, shall be held and enjoyed by persons possessing certificates to practise the art of medicine according to the provisions of this Act, and such persons only.

38. *Money Accounts.*—And whereas disputes and differences have arisen as to the right of medical practitioners to recover at law charges for professional visits and consultations, be it therefore enacted, That any person duly qualified to practise the art of medicine may recover in any court of law by action of promises, or debt, any reasonable sum of money for professional visits and consultations, together with full costs of suit.

39. Medical practitioners, and chemists and druggists, shall be exempt from serving as *jurors* and *other officers*, after the passing of this Act.

40. This clause imposes a penalty of £100 on any registrar or his deputy refusing or neglecting any duty enjoined by this Act.

41. This clause imposes a penalty of twelve month's imprisonment for illegally obtaining diplomas, certificates or licences from any registrar.

42. This clause imposes a penalty of six months' imprisonment for making a false declaration under this Act.

43. This clause imposes a penalty of £20 (each offence) for illegally practising medicine, or carrying on the trade of chemist and druggist.

44. And be it enacted, That every medical practitioner and every chemist and druggist who shall employ any assistant not being duly qualified according to the provisions of this Act, or who shall neglect to make a declaration of any person being an assistant or apprentice in his employ according to the provisions hereinbefore contained; and every person not being duly qualified according to the provisions hereinbefore contained, who shall act as an assistant to any medical practitioner or chemist and druggist, shall pay for every such offence any sum not exceeding ten pounds.

45. This clause states that offences under this Act may be prosecuted before any two of her Majesty's justices of the peace in petty sessions assembled acting in and for the county in which the offence has been committed, &c.

46. And be it enacted, That in every adjudication of a penalty under this Act, and nonpayment thereof, it shall be lawful for the magistrate to commit the offender to any gaol within his jurisdiction, for one calendar month where the sum shall not exceed five pounds, and for three calendar months where the sum shall exceed five pounds, the imprisonment to cease on payment of the sum due, and the costs for the recovery thereof; and the one moiety of every penalty recovered shall be paid to the informer, and the remainder to the treasurer of the medical council for that part of the United Kingdom in which the offence was committed.

47. Any person who may think himself aggrieved by such conviction may appeal to the justices of peace at the next general or quarter sessions of the peace, under such restrictions as are usual or proper in cases of appeal against convictions before magistrates.

48. Business that may happen to fall on a *Sunday* shall be done on the Monday following.

49. And be it enacted, That this Act may be *amended* or *repealed* by any Act to be passed in the present session of Parliament.

SPIRIT OF THE FOREIGN PERIODICALS.

INTERESTING CASE OF ENDO-PERICARDITIS AFTER RHEUMATISM.

On the last day of April, 1837, M. Bouillaud was summoned to visit Dr. R. residing 26 miles from Paris, who, he was informed, after having been for upwards of a fortnight suffering with severe articular rheumatism,* was then labouring under alarming symptoms of thoracic distress, so that his life was almost despaired of. On his arrival, he found his patient seated in an arm-chair, breathing with great difficulty, his face puffy and swollen, and his legs considerably infiltrated. Several medical men were in the room, and all of them were justly alarmed.

I examined, says our author, the respiratory and circulatory organs, and discovered the most characteristic symptoms of an endo-pericarditis (effusion into the pericardium) and of a double pneumonia with effusion into the pleuræ;—the effusion filled almost the entire left side, but only the lower third of the right side: the pulse was from 108 to 120. In spite of the advanced period of the disease, I at once recommended the adoption of vigorous antiphlogistic treatment.

The patient was bled immediately to the extent of sixteen ounces, and a large number of leeches applied to the chest, so as to obtain nearly twelve ounces

* In the letter requiring M. Bouillaud's presence, the following abridged account of the case up to that date is given. Dr. R. had on two former occasions suffered from acute gouty rheumatism. The present attack supervened about three weeks ago when he was not yet recovered from the influenza. Almost every joint in the body was affected with pain, and there was considerable fever, especially towards the evening; the pulse was not strong. The treatment consisted in the use of warm diaphoretics and gentle purgatives. Nine days ago, he was first seized with a sharp pain in the left sterno-clavicular region; it was relieved by leeches, but next day it returned with as great severity at the base of the chest on the left side, near the attachments of the diaphragm, and was accompanied with considerable embarrassment in breathing: it was considered a muscular pain. As however no relief was obtained from the application of leeches and afterwards of a blister, twenty ounces of blood were drawn from the arm, and the patient was put in a vapour bath. In spite of these means, the dyspnœa became more distressing; so much so that he was obliged to get out of bed and walk about the room: the pulsations of the heart were at this time extremely tumultuous. The dyspnœa was regarded as purely spasmodic; and, as the exacerbation of fever took place every evening, quinine was administered with the view of arresting the paroxysms. It is stated that, up to the evening of the 22nd April, auscultation afforded no symptom to indicate any alarm: that then for the first time a strong blowing sound was heard over the heart, the movements of which were excessively tumultuous. Next day, the patient was very low and depressed; his breathing was still very difficult, so that he could not lie down. He was cupped over the cardiac region; a blister also was applied there, and a mixture containing digitalis was ordered. The symptoms continued with increased severity up to the day that M. Bouillaud was summoned to his assistance. As each evening the dyspnœa became more and more alarming, and gradually abated towards morning, the physicians in attendance allowed themselves to believe that the disease was of an intermittent character, and required the use of quinine again, although it had been tried already without any benefit.

more. Next day, he was again bled from the arm—the blood on both occasions was buffy. During the night the patient was excessively restless and distressed, being every now and then forced to get out of bed in consequence of a feeling of imminent suffocation: occasionally too he was delirious. Towards morning he became easier, and his respiration more free, except when he attempted to move, and then it was always suffocating. The pulsations of the heart were violent but regular; the sound of ægophony was distinctly audible on the left side, but on the right it was no longer perceptible, and resonance was established at every point. The prognosis therefore was that the fluid in the right pleura had been absorbed, and the quantity in the left one diminished. Next morning (2nd May) another bleeding to the extent of eleven ounces was practised, and the blood was again found to be buffy; the pulse was still upwards of a hundred, but the movements of the heart, though violent, were somewhat calmer. 3rd May. The patient was bled for the fourth time, and two blisters were applied on the chest—the ægophony was still distinct on the left side; the evening exacerbation of the febrile symptoms was rather less. On the following day (4th) there was a marked improvement; the pulse had fallen to 92, the hopes of the patient were raised, and he began to desire for food, having hitherto been restricted to “la diète la plus absolue.” Every thing now advanced favourably; the level of the water on the left side gradually descended, and by the 15th, the fluid was nearly all absorbed. Two fresh blisters had been applied; and in addition to the treatment already described the patient had, since the visit of M. Bouillaud, taken calomel in conjunction with digitalis or the extract of opium. Eventually Dr. R— recovered his health completely; and is now practising his profession at ——. *Traité du Rhumatisme par J. Bouillaud.*

The preceding history is very interesting, and illustrates exceedingly well the danger that is apt to arise from overlooking existent disease of the heart and from attributing to spasm the dyspnœa and other thoracic symptoms, when in truth they arise from inflammation. There is reason to believe that such an error in diagnosis was at first committed in the case of the late King William IV., and that the disease had already advanced to a dangerous extent before anti-phlogistic measures were resorted to.—*Rev.*

M. ANDRAL ON ENDOCARDITIS AND CARDITIS—CASE OF ALLEGED GANGRENOUS ENDOCARDITIS.

.....“The inflammation of the membrane, which lines the cavities of the heart, presents analogous appearances to those observed on the internal tunic of the blood-vessels when they are inflamed. The morbid changes are of a similar nature, although never existing to the same extent. Thus, the cavities of the heart are too large ever to be nearly obliterated from the effects of endocarditis; but still there is no doubt but that a sudden and very manifest contraction of the cardiac orifices may be induced in this way. The internal surface of the heart exhibits a granulated aspect; and at the points which are the least smooth (les plus dépolies) we observe small coagula adhering. If the endocarditis has become chronic and has existed for a length of time, the lining membrane becomes considerably thickened, and covered with large opaque patches, more especially in that portion which corresponds to the valves. These are the only morbid changes which are necessarily induced; but others may be developed, such as cartilaginous concretions, or ossific cretaceous deposits. It is exceedingly rare that purulent matter is secreted on the surface of the inflamed endocardium.

In some cases the entire substance of the heart's parietes becomes affected with inflammation; and, when this occurs, it is not unfrequent to find purulent

matter under the endocardium, or fairly intermixed with the muscular fibres, which are then usually soft and lacerable. Sometimes we observe a genuinely ulcerative carditis; it may terminate in a complete perforation of the heart: when this occurs, the *ramollissement* of its substance is always very great. Such are the immediate consequences of carditis; among the more remote, hypertrophy of the organ is one of the most frequent. In truth, the orifices of the heart become contracted in carditis; to expel the blood, the organ must contract with more than usual force; and you know that it is a law of the organism, that every organ, whose activity is augmented, becomes the seat of a more active nutrition. Such is the usual cause of hypertrophic enlargement. In the same manner we find the walls of the stomach acquire a great thickening, when the pyloric orifice becomes in any way obstructed: the bladder also is liable to the same condition, when there is any impediment to the excretion of the urine."

..... The following case of what the observer, Dr. Gigon of Angouleme, calls gangrenous endocarditis, is reported in a recent number of the *Expérience*

A man, 56 years of age, was attacked with symptoms of thoracic distress after exposure to wet and cold. He was bled twice from the arm, and various remedies were used. The dyspnoea, however, gradually increased, and at length Dr. G. was summoned to his assistance, during the sixth week of his illness; his case having been considered at one time as of asthma, and at another of hydrothorax, or of hepatisation of the lungs. When Dr. G. saw him, he was sitting upright, panting for breath, and every now and then crying out for fresh air, for he felt as if he was about to be strangled.

On examining the chest, the cardiac region was observed to be distinctly more prominent than the chest on the opposite side; the impulsion of the heart was scarcely perceptible; a distinct (beau) blowing and somewhat rasping noise was heard at both sounds; but it was loudest during the first sound towards the apex of the heart, and during the second one towards the edge of the sternum.

The auscultation of the breathing did not afford any thing remarkable; there was a slight mucous *râle* behind on the right side. The pulse was somewhat irregular, but did not exceed above 80 beats in the minute; it was soft, but not filiform. The diagnosis, which was formed, was *contraction of the right and left orifices of the heart, the probable result of overlooked acute endocarditis*. Dr. G. presumed that there was a contracted state of the cardiac orifices, from the distinct blowing and sawing noise heard during the sounds of the heart, and from the extreme difficulty of breathing that was present; and judged that this had been induced by preceding endocarditis, from all the details of the case. The attack was recent and acute—of six week's duration at most. The patient had never suffered from rheumatism, nor experienced any distress about the region of the heart; and certainly a chronic organic lesion, capable of producing such alarming symptoms as were present, could not have allowed the patient to have undergone the fatiguing and laborious exertions to which he had been accustomed, before his attack of illness. He died three days after Dr. Gigot's visit.

Dissection.—In the right pleura there was a considerable effusion of reddish serosity; the lung on this side was pushed upwards and backwards towards the vertebral column. The left lung was adherent over a considerable extent, but its tissue as well as that of the right one, was very where crepitant, although, when cut across, a quantity of water flowed out.

Immediately underneath their pleural surface there were numerous livid spots, very similar to those observed on the skin in purpura.

The pericardium was sound; and there was scarcely any fluid within its bag. The heart itself was large, and much distended with soft non-adherent coagula.

When freed from all its coagula, it weighed 13 ounces. The endocardium of the right cavities did not exhibit any appearance of redness or change any where ; but the edges of the tricuspid valve were thickened and of a reddish colour at several points.

Around the orifice of the pulmonary artery the ventricle was coated with a tolerably firm layer of lymph ; and this extended back among the *columnæ carneæ*, and seemed to be continued from a coagulum, which existed in the auriculo-ventricular orifice. On the left side of the heart, the following morbid appearances were observed : the mitral valve was exceedingly strong and thickened : its edge was of a deep scarlet hue ; but nothing indicated any imperfection of its mechanism. The chief lesion was in the aortic valves : two of them were indurated, and adhered together by their adjacent angles ; they were thus immoveable, and projected considerably into the tube of the aorta. The endocardium at the bases of these valves was red and thickened ; but towards their free edges, it was soft, friable of an ashey-grey colour, and decidedly ulcerated. One of them was perforated at its centre by an opening, of a line in diameter. Every thing in the aspect of these two aortic valves indicated a gangrenous disorganization. There were no traces of ulceration on the third valve ; it was only very red, and slightly thickened. These three valves exhibited, therefore, traces of distinct inflammation in three different stages :—1, redness with thickening ; 2, gangrenous ulceration ; and lastly, gangrene with perforation. The internal membrane of the aorta was reddened for a considerable extent beyond the valves ; it was also soft, and could be easily separated with the nails.

Dr. Gigot appends the following remarks to the preceding details. “ No doubt can exist, in our opinion, as to the date and the nature of the disease in the present case ; for, six weeks before his death, the patient was quite well, and could engage in laborious occupation without any inconvenience. He had never suffered with any symptoms of pulmonary or of cardiac disease. All of a sudden, after exposure to cold and wet while perspiring freely, he was seized with sharp fever and difficulty of breathing : the treatment was inefficient, and he died.

Dissection revealed the following appearances : redness, swelling, softening, ulceration, gangrene, false membranes of the endocardium. With such symptoms as we have alluded to, and with these post-mortem appearances before us, we cannot refuse to admit the existence of acute and violent inflammation.”

M. ANDRAL ON THE CHANGES OF THE BLOOD IN DISEASE.

MM. Andral and Ganneret have for some years past directed their attention to the study of the blood, more especially in reference to the relative quantities of its fibrine, its colouring particles and its serum, in a great variety of diseases ; and the results of their enquiries were recently submitted to the Royal Academy. They are founded on the examination of 360 bleedings, drawn from 200 patients.

We may state, as one of the general results of their enquiries, that they have found the proportion of the fibrine, in 1,000 parts of blood, to vary from one to ten, that of the globules from 185 to 21, that of the solid matters of the serum or the albumen from 104 to 57, and that of the water from 915 to 725.

In a state of disease, it is not common to find that these different constituents of the blood increase or diminish in quantity simultaneously. Most frequently one only of them is decidedly affected ; but occasionally two of them are altered in their relative proportions at the same time ; and then this is usually

in an inverse or opposite ratio. For example, when the quantity of the fibrine is increased, that of the globules is generally found to be diminished; and *vice versa*.

Before stating the results of MM. Andral and Ganneret's experiments, we shall briefly describe the composition of the blood in a healthy state, so that our readers may be enabled to compare the changes which occur in disease with the normal standard.

The *solid part*, the clot or coagulum, of the blood is composed of 1, the fibrine, which forms a large mesh-work holding in its interstices the other elements which enter into the composition of the clot; these are—2, the blood-globules—and 3, a great quantity of serosity, similar to that in which the clot floats, but which is retained in the meshes of the fibrine, as water is in the tissue of a sponge. The *fluid part*, or the serum, is water holding in solution —1, albumen—and 2, saline ingredients, the chief of which are the muriates of potash and soda, the carbonate of soda, the sulphate of potash, and the alkaline phosphates. It is to be observed that, in the coagulation of the blood, the separation between its solid and its fluid constituents is far from being complete. The coagulum retains a large quantity of serosity,—amounting to at least three-fourths of its weight. It is therefore a most serious error to suppose that the proportion of the coagulum to the serum of the blood can be ascertained by a simple inspection of their respective quantities. To estimate the proportion of the fibrine, one of the best plans is to well beat or whisk the blood, while recently drawn, with a rod: if this be continued sufficiently long, all the fibrine will become attached to the rod, free from the red globules, and from the other constituents of the blood, which remain behind. The globules are entirely distinct from the fibrine: the first may be altered, while the second remains unaffected; and *vice versa*.

The globules are formed of albumen united to hæmatosine: there is another quantity of albumen held in solution by the serum. Whatever opinion we hold as to the nature of these two sorts of albumen, we cannot refuse to admit that one forms an integral part of the blood globules, and that it is quite distinct from the fibrine. The well-known experiment of Müller is decisive on this point. On filtering the blood of a frog, the globules are left on the filter, and we then procure a colourless fluid, from which there is gradually deposited a coagulum of pure fibrine. The old opinion therefore, that the globules of the blood consist of fibrine and colouring matter, is now universally acknowledged to be erroneous. Before we proceed to give a summary of the researches of MM. Andral and Ganneret on the various changes, in the relative quantities of the different leading constituents, of the blood in different diseases, we must have a standard of comparison to represent the condition of the blood in a state of health. The following may be assumed as sufficiently correct.

In 1000 parts,

There are 3 of fibrine	} the dry Coagulum.
2 of hæmatosine	
125 of solid albumen in	
the globules	

68 of liquid or dissolved albumen	} the Serum.
12 of saline matters	
790 of water	

As it is in one or more of these elements that the manifold changes, which occur in the blood during different diseases, are manifested, it is most important to determine accurately the constitution of healthy blood. The errors which have been committed on this subject, even in recently published works, have

been very egregious. For example, the proportion of fibrine has been stated to be as high as 10, 14, and even 21 in the 1,000 parts; and that of the serosity sometimes as low as 600!

But it is unnecessary to dwell further upon this subject; and we shall therefore now proceed to state, as summarily as we can, the results of MM. Andral and Ganneret's observations on the changes which the different constituents of the blood undergo in different classes of diseases. These may be arranged as follows:

1. Those in which the quantity of the fibrine is constantly increased, as the *phlegmasiæ* and in tubercular *phthisis*.

2. Those in which the fibrine is in a normal or in a diminished quantity, while that of the globules is either normal or increased, as the *pyrexia*, and many *hæmorrhages* and *congestions*.

3. Those in which the quantity of the globules is always diminished, as *chlorosis*, &c. &c.

4. Serum, in which there is a diminution in the quantity of the albumen in the serum, as in *albuminuria* or the *morbus Brightii*.

It is not to be supposed that in many diseases the alteration of the blood is confined to one only of its constituents: several may be affected at the same time.

For example, if a chlorotic patient is seized with any inflammatory disease, the blood will be found still to contain a diminished quantity of the red globules, but then that of the fibrine will be now increased. "We have so repeatedly," say the authors, "witnessed these results, that, whenever the quantity of the fibrine is found to exceed five parts, we should not hesitate at once, and without further knowledge of the case, to assert that the patient is labouring under an inflammatory disease; and, on the contrary, whenever there is less than two parts of fibrine, we should, with equal confidence, deny the existence of such a complication."

Besides actual disease, the privation of nutritious food and any loss of blood will much influence the proportions of the constituents of this fluid: these causes act chiefly by diminishing the quantity of the red globules. But it is to be observed, that in different cases the influence of these agents is very different. There are in this respect great individual differences and a great inequality of resistance: so much so that while in one patient, from one blood-letting to another, the globules will not lose above two or three, in another patient the loss will amount to thirty or forty in a thousand parts. While the proportion of the red globules is always more or less affected by previous blood-letting, that of the fibrine is usually little, if at all, affected by it; it is very rarely diminished, and in some cases even seems to increase. It is only when the detraction of blood has been considerable, and when the proportion of the globules has commenced to undergo themselves a marked diminution, that we observe that the proportion of the fibrine, and indeed of the other solid constituents of the blood, becomes very sensibly impaired.

First Class.—MM. Andral and Ganneret have examined the blood in 82 cases of *Phlegmasiæ*—articular rheumatism, pneumonia, bronchitis, pleuritis, peritonitis, tonsillitis, erysipelas, cystitis, acute suppuration of the lymphatic glands, and furuncular eruption with fever—and in 152 bleedings practised in these diseases. In all these cases, where the disease existed in an acute form and was accompanied with fever, the blood drawn exhibited a notable increase in the proportion of its fibrine. If we take the number three as indicating the normal proportion in the thousand parts of this constituent in a state of health, in rheumatism, and in pneumonia, it was observed to oscillate between four and ten, the medium being seven and eight. In bronchitis the medium was between six and seven; in pleuritis and in peritonitis between five and six; and in

the other diseases enumerated it was somewhat lower. In no case, however, did the proportion fall below four, and very rarely below five. It is to be remembered that in every instance the disease was strictly acute, and moreover was attended with distinct febrile excitement. If the disease was originally, or if it had become of a chronic character, and if fever was never present, or if it had ceased, the proportion of the fibrine may no longer be found to be in excess.

Whenever a phlegmasia abates, the proportion of the fibrine in the blood diminishes; and if, after it has abated, it becomes again aggravated, the quantity of the fibrine is found again to increase. If an acute inflammation occurs in the course of another disease, its existence may immediately be detected by an increase in the proportion of the fibrine.

Very different is the case with the red globules; for it would seem that they never become increased in quantity in any inflammatory disease; often, indeed, they appear to be diminished. In all cases, however, when the inflammation subsides, the quantity of the globules is certainly diminished; but this effect is most probably owing to the loss of blood and the low diet which have been practised. A great diminution in the proportion of the globules does not seem to prevent the development of inflammatory action; and, on the other hand, a surcharge of them in the blood does not seem to predispose to or favour it.

The observations of MM. Andral and Gannet shew that the development of inflammation is compatible with very different conditions of the blood in reference to the proportion of its red globules; this being sometimes as low as 48, and other times as high as 60.

In all inflammatory diseases, the quantity of the solid constituent of the serum, or the albumen, did not exhibit any notable alteration. The proportion of the water varied from 771 to 840.

So much for the state of the blood in the phlegmasiæ. There is another disease in which our authors have invariably detected an unusual quantity of fibrine in the blood—viz. tubercular phthisis. Whatever be the period of the disease, there is always observed a tendency to an increase of the fibrine and a diminution of globules of the blood; but neither the one nor the other change are at all equally marked in all its stages or phases.

As long as the tubercles are crude, the increase of the fibrine is inconsiderable, not exceeding four—the proportion in healthy blood being denoted by three; and the diminution in the proportion of the globules, although manifest, is not yet decided. But no sooner do the tubercles begin to soften, than the increase of the one constituent, and the diminution of the other, become much more apparent. At length when the lungs are hollowed with vomicæ, the proportion of the fibrine will be found to have risen to five, five and a half, or even six. If, however, the marasmus is very great, the quantity of this as well as of the other constituents obeys the law of decrease, and falls even below the normal standard. In general, the blood of phthisical patients contains the largest amount of fibrine, whenever they begin to be affected with a continued febrile movement.

While these changes are going on in the fibrine, the red globules are equally changed but in quite an opposite manner—the proportion of these becoming less and less as the disease advances. During its first stage, the proportion of this element is at or above 100; in the second stage, it falls somewhat below this number; and in the third stage, it falls still lower, but was never observed below 81. The solid constituents of the serum in phthisis were found to vary from 61 to 98; while the quantity of its watery portion varied from 784 to 845.

Class Second.—Diseases in which the fibrine of the blood is in a normal or diminished quantity, while that of the red globules is either normal or increased. This class embraces two orders—*pyrexia* or *fevers*, and several *congestions* and *hemorrhages*. During the precursory stage of fevers, we never observe any

increase, and rarely any diminution, in the fibrine : while, on the contrary, we never observe a diminution,—provided no blood has already been drawn—but often an increase in the proportion of the red globules.

Simple continued Fevers.—Provided no distinct inflammatory action is going on in any part, the blood is usually found in the condition now described. In one case of well marked *angiotenic* pyrexia, the proportion of the globules had risen as high as 185, while that of the fibrine was at the normal standard.

Typhoid Fevers.—In consequence of the inflammatory appearance of the intestinal lesions, which form the anatomical feature of these fevers, we might expect to find the blood exhibiting the characters which it presents in the phlegmasiæ ; but such is not the case, whatever be the intensity of the intestinal inflammation. At no period of typhus is the blood ever found to contain a larger amount of fibrine than it does in health ; but, on the contrary, the proportion is often decidedly less. The more serious the fever, the more decided is usually the diminution of this constituent. As to the proportion of the red globules, whereas this is but little affected at least before the employment of bloodletting, &c., it seems almost always in fevers somewhat higher than in health, more especially in the early stages of the disease. Thus even on the eighth day of a fever, it is not unfrequent to find the quantity of the globules as high as 140 or 150, whereas in pneumonia and acute rheumatism it seldom or never exceeds 130. Even after the employment of blood-letting and the use of a low diet in cases of fever, the proportion of the globules is seldom or never found so low as 130. How different from what we observe in the genuine phlegmasiæ ! However,—and this circumstance is very remarkable—the high proportion of the globules either may never have existed or it may have ceased to exist, and yet typhoid fever may be developed and may proceed in its course.

Eruptive Fevers, as small-pox, scarlatina and measles. In these fevers, the fibrine of the blood has been found as low as one, and has never exceeded four : and this maximum was observed in one case only. It is indeed surprising that in a disease like small-pox, in which the skin is the seat of a profuse suppuration, the blood should never exhibit the signs which characterise this fluid in the genuine phlegmasiæ. We must therefore regard the cutaneous inflammation in variola, as well as the intestinal inflammation in typhus, as only one element of a more general disease which overpowers them, and from which the blood receives its peculiar characters. With respect to the globules in the eruptive fevers. We may state that we have found their proportion in several cases of rubeola and scarlatina, but not in a single instance of variola.

Intermittent Fevers—In all the cases in which the blood,—whether it was drawn during a paroxysm, or during an intermission—has been examined, our authors have obtained only negative results.

Congestions and Cerebral Hemorrhagies.—In the majority of cases, but not in all, the proportion the fibrine has been found below the normal standard, while that of the globules was either equal to or exceeded it : these characters were most distinct at the beginning of the invasion.

Class Thrd.—Diseases in which the quantity of the globules of the blood is invariably diminished. The most remarkable of these are chlorosis, various dropsies, the cachexia from the influence of lead, or from protracted agues, profuse hæmorrhages : in some cases of chlorosis the proportion of the red globules has fallen from 127 (the normal standard) as low as 38 ; more usually it

does not descend lower than 50. In one case of extreme etiolation from profuse hæmorrhage, the proportion of the globules did not exceed 21. The proportion of the fibrine is never affected to the same degree as that of the globules in the diseases above enumerated. MM. Andral and Gannet had repeated opportunities of observing the gradual increase in the quantity of the red globules in chlorotic patients, during the administration of steel medicines; in one case the rise was from 46 to 95.

Class Fourth.—Diseases in which the solid constituent, or the albumen, of the serum is diminished. MM. Andral and Gannet have in several instances of albuminuria found that the proportion of the albumen in the serum of the blood had fallen from 72, the normal standard, down to 60 and 56. The other constituents of the blood have in these cases exhibited no steady or uniform deviations; those, which have been observed, seem to have been chiefly attributable to some accidental circumstance, such as the occurrence of inflammation somewhere, or of excessive weakness and emaciation.—*Gazette Medicale*.

It must be quite unnecessary to direct the *special* attention of every reader to the preceding most valuable communication. M. Magendie has already announced that he has been for some time past engaged in a similar series of experiments with those which have now been communicated to the Academy by MM. Andral and Gannet. The subject is one of exceeding interest, and of the greatest practical moment. We have of late years repeatedly expressed our conviction that it is chiefly by an accurate observation of the changes of the blood and of the secretions that we are to look for any important advancement in our knowledge of the nature of diseases, and of the most successful method of treating them. It might be hasty to draw any practical conclusions from the researches of which we have given a brief account: they require to be confirmed by other observers, before we are warranted in doing this. We may however direct our readers' particular attention to the very curious circumstance of the blood in phthisis exhibiting the same character, at least in reference to the increased quantity of its fibrine, as it is well known to do in the phlegmasiæ; and also to the very striking difference between the state of the blood in the phlegmasiæ and that of this fluid in the genuine pyrexia or fevers.—*Rev.*

M. ROSTAN ON THE PATHOLOGY OF TYPHUS FEVER.

The following brief extracts from one of M. Rostan's recent clinical lectures will shew his opinion on the *gastro-enterite* doctrine of typhus.

..... "Is the affection of the Peyerian glands an inevitable occurrence in typhus, and is its existence essential to characterise the disease? We must admit that in an immense majority of cases, these glands are really affected in various degrees; but it is incontestable that the disease may exist without any appreciable post-mortem alteration in them. I should also mention that the Peyerian glands are not found to be altered in those diseases which have the closest analogy with typhus, such as phlebitis, and the absorption of purulent matter into the system. In the ataxic fever of Pinel all the characters of typhus are observed; but not its anatomical lesions. Far be it from us to call in question the existence of typhus; we only wish to shew that various causes may give rise to morbid poisonings, whose phenomena are similar to those of typhus, without their being attended with any alteration of the intestinal glands, such as is usually met with in it."

..... "The blood exhibits specific characters which are of the greatest interest. Those pathologists, who see nothing in typhus but a serious inflam-

mation of the intestine, pretend that the blood retains at first all its normal properties, and undergoes alteration only in consequence and as a result of the disease, and then becomes diffuent. Now it is quite true that, at the commencement of the disease, the blood exhibits all its normal physical characters, and seems to retain all its physiological characters. In this respect it resembles the blood of persons who have been submitted to the action of the cow-pox virus. In them it apparently preserves all its properties; we cannot indeed detect any change or modification in it; and yet this cannot be strictly true, seeing that this blood has now acquired the property of resisting the influence of small-pox:—some change or modification therefore must surely have taken place in it. There is moreover something analogous in these two affections, cow-pox and typhus, and indeed in all other morbid states of the system which arise from the operation of any poisonous or septic agent. Thus the specific effects of the vaccine virus are not felt, during the first three or four days after its insertion, on the mass of the blood, which does not yet possess the properties necessary to resist the variolous contagion,—even although the vaccination may have already caused a febrile re-action. In the same manner in typhus, the blood retains, in the early days of the disease, its normal appearances, although most certainly it is already modified or altered by the influence of the typhoid poison introduced into the blood. These considerations lead us to believe that the alteration or modification of the blood, induced by the introduction of a poisonous agent, is gradual and progressive, and not simultaneous and immediate—the rapidity with which this takes place, being probably owing to the greater or less virulence of the toxic or poisonous agent. I am of opinion, continues M. Rostan, that the fluidity or diffulence and the violet colour of the blood observed in typhus is not the result of the disease; but, on the contrary, that they are the immediate effect of the specific cause of the fever. Moreover experience demonstrates to us that the blood never undergoes these peculiar changes in any genuine inflammatory disease;—which should surely be the case if the modifications, which it exhibits in the course of typhus, were really the result of an open (*franche*) or prolonged inflammation, as many medical men of the present day believe.”—*Gazette des Hôpitaux*.

Remarks.—We are glad to find that M. Rostan, whose name deservedly stands high among the physicians in the French metropolis, abjures the Broussaian dogma that typhus fever is in truth a *gastro-enterite*. We do not deny that the intestinal mucous glands are not unfrequently found, in this disease, more or less altered on dissection; but to regard such an alteration as the essential and initiative morbid element, is just as reasonable as to view the enlarged cervical glands the *cause* of the scrofulous diathesis. It is truly astonishing how long, and to what extent, so many of the French physicians have allowed themselves to be the dupes of a doctrine which *à priori* appears so improbable, and which, in spite of the zeal with which some of its advocates still support it, is gradually becoming more and more obsolete. We are pleased to observe that M. Rostan, while he exposes the fallacy of his countrymen in this respect, is impressed with the importance of studying the alterations of the blood in typhus fever. Every year we are returning more and more decidedly to the Boerhaavian hypothesis, that fever is the effect of some morbid poison introduced from without or generated within the system itself, and that its phenomena are just the evidences of numerous changes which the poisoned state of the blood induces in the numerous organs of the body. It is true that this doctrine in former times gave rise to many fanciful and most incorrect notions, which, as they were the offspring of mere conjecture and not of correct observation, can never gain our assent; but it is equally true that the humoral pathology of numerous diseases, and unquestionably of fevers among the number, gives a far more rational explanation of their phenomena than the modern doctrine of localisation, as the

French call it. That the exanthematous or eruptive fevers are the effect of the introduction of a poison into the system will not be disputed by any one. Then, why should not the same be the case in the case of typhoid fever, which has so close an affinity, nay, we may rather say, so perfect an identity, with them? The more that we consider the subject, the more reason we shall find to adopt a humoral pathogeny of typhus fever.

In a recent number of Ammon's *Mohatschrift für Medecin &c.*, there is a paper by Dr. Cramer of Cassel, who maintains similar views. He says: "ordinary typhus is the result of an infection, or poisoning of the blood;" and in reference to the affection of the intestinal mucous glands, he says, "we must regard, as a peculiar product of the dyscrasis of the blood, the typhoid tubercle which is formed in these glands and excites ulceration in them. This ulceration is therefore one of the effects, and certainly not the cause of the disease; it may be awanting, and yet the fever may nevertheless follow its usual course."

In another German journal, the *Medicinisches Correspondenz-Blatt*, for the same month, there is a paper on abdominal typhus by Dr. Sicheser of Heilbrunn. He considers it as "a disease of the blood," which attacks only secondarily the nervous and other systems of the body. In short, in every country, there seems to be a manifest tendency among medical writers to the establishment of a modern humoral pathology.—(Rev.)

M. ROSTAN ON THE TREATMENT OF TYPHUS.

M. Rostan very judiciously reprobates the adoption of any exclusive system of treatment in typhus. Alluding to the practice of *testing*, so to speak, the relative value of different modes of treatment by comparing their results in equal numbers of cases, he says,—

"Some physicians of late have taken, for example, a hundred patients, whom they have divided into five series, of 20 each, and then they have treated each series upon a particular plan, such as the antiphlogistic, the purgative, the tonic, or the expectant; and, from the comparative number of cures in each series, they have attempted to determine the relative value of these different modes of practice. Now what has been the result of this arithmetical mode of procedure? Why, that each mode of treatment has been nearly equally unsuccessful! But such a method of drawing conclusions is dangerous in the extreme; for each individual case of the disease requires an individual mode of treatment, and each form a peculiar management. Now each series having been taken at hazard, without any attention to the form of the disease, does it not follow as a necessary consequence, that a mode of treatment, which may have been suited for one form, was most probably any thing but appropriate to another form? It is thus evident that if those patients, who were affected with the inflammatory form, were treated with stimulants and tonics, they must almost necessarily have been injured; and on the other hand, if those, in whom the adynamic form was present, were treated antiphlogistically, an equally unsuccessful result must have followed."

M. Rostan, after these preliminary remarks, makes some brief comments on the different lines of practice which have been adopted in the treatment of typhus; and first on—

The Antiphlogistic or Depletory Method.

Some physicians have pretended that by bleeding largely, and according to a particular formula, they have often succeeded in strangling the disease. From a considerable experience I am convinced that large and repeated bloodletting is the most certain method of inducing a most dangerous adynamic prostration

and of accelerating the death of the patients. Where such a practice has succeeded, we may be certain that the case was not one of typhus fever, but rather of some genuine inflammation. I know, says M. Rostan, that to reason in this manner is to make a *petitio principii*; but my conviction is so strong upon this point that I am forced to admit such a principle. In all diseases which are produced by the action of some specific cause, bloodletting is insufficient to arrest the progress of the mischief; not so with respect to genuine inflammation. It is by reasoning in this manner that I can understand how those physicians who do not recognize any *specificité* in typhus fever, and who regard it only as one from gastro-intestinal inflammation, have succeeded in curing typhoid affections by bloodletting; for in truth the cases were examples of genuine inflammation, and not of fever. In fine, I am convinced that depletions of blood cannot be safely employed in the treatment of typhus, but with the greatest caution. In this respect I agree with MM. Chomel and Louis that, when the disease presents itself under an inflammatory form, we have recourse to antiphlogistic remedies with moderation, but that we should never exceed one or two small bleedings.

The Expectant Method.

M. Rostan mentions that, when the Academy of Medicine was recently occupied with the question as to the best mode of treating typhus fever, some of the Academicians submitted the results which they had obtained in their practice by "*la methode expectante*," or in other words by doing little or nothing, and thus leaving the case almost entirely to the curative efforts of Nature; and that it appeared that these gentlemen could boast of as many cures as their confreres who had been bleeding and purging their patients in the most vigorous style.

M. Rostan, however, is too sensible a man to allow his mind to be influenced by the reasonings of either party. The cures effected by the expectant method must have been in cases of but trifling severity, and where the febrile action had a tendency to run its course with moderation; but to suppose that either the strictly inflammatory, or the strictly adynamic form, of typhus is not under the influence of remedial measures, and should therefore be left to itself, is at once both most foolish and pernicious. It is, however, quite true that almost every case of fever, whether it be of a phlogistic or of an adynamic character, at one stage of its progress, requires an *expectant medication*, when all active treatment either of a depletory or of a tonic nature should be suspended. This is at the moment when the fever, having already received the application of the therapeutic agents which its type may require, has a natural tendency to progress in a favourable manner. Such a mode of *expectation* is, however, very different from the "*fare niente*" practice of some physicians. The practice in the one case is like that of a general who first strikes a decisive blow upon the foe, and leaves him to capitulate; that in the other, of one who expects that he will surrender without any effort made to compel him.

The Revulsive Method, Cutaneous Irritants.

M. Rostan at once proclaims his dissent from the opinion of M. Louis, that the use of vesicatories is hurtful;—he has repeatedly had occasion to observe that, after the action of a blister, the pulse has very considerably abated in frequency, and the other symptoms become diminished in severity. "I am convinced," adds our author, "that at a certain period of typhus, when the loss of blood cannot be safely continued, and when it would be unsafe to act on the system of *expectation*, we may have recourse to cutaneous revulsives with great propriety. It is true that they succeed less frequently than abstractions of blood: but we should remember that the proper period for their use coming after that for bleeding, and when this remedy has not sufficiently arrested the

course of the disease that it may be safely left to itself, the conditions in which they (blisters) are employed are more unfavourable.

The Purgative Method.

..... "Observing the little success that attended the practice of most physicians in typhus, M. Larroque came to the resolution of employing purgatives in all cases of the disease. Viewing the disease not as a simple inflammation, but as the result of a general poisoning or infection of the whole system, he imagined that the best plan of treatment must be to endeavour to destroy and evacuate the poison by promoting free evacuations from the bowels; and we must confess, that, by following out this idea, he has met with very considerable success in practice."

Is it not strange that an educated physician, like M. Rostan, should attribute to M. Larroque the introduction of the free employment of purgatives in typhus? The French writers seem to be utterly ignorant of what has been done in any other country save that of 'la belle France.'

The following sentence embodies the results of M. Rostan's experience of the purgative method. "In the first thirteen well-marked cases of typhus, in all of whom petechiæ had appeared on the surface, and in several of whom there were eschars on the sacrum, the employment of active purgation was attended with perfect success. Subsequently, however, we have not been so fortunate; and in truth, we have of late actually lost more patients by following M. Larroque's method than by any other plan of treatment." He proceeds to state that physicians differ much as to the most proper period of the fever at which purgatives should be employed; some recommending them at the beginning, and others at the close of the disease. (!) For his part, he adds, he has recourse to them, whenever there is the indication to purge, whatever may be the period of the disease at the time. (!)

The Tonic Method.

The employment of tonics for the cure of typhus has been most bitterly condemned by most physicians. In truth, they have been very unsuccessful; but then this arises from medical men seldom having recourse to them except in desperate cases; the tonic treatment is the *therapeutic extreme unction*, by means of which it has been expected to raise up patients from the profound adynamic state into which they have fallen. At the disastrous epoch of the retreat of our armies, the Salpêtrière hospital was temporarily devoted to the military service. Pinel and Landré-Beauvais were at the head of the service, which I (M. Rostan) superintended for them at this period. During the space of six months, 18,000 patients affected with typhus were received into the wards; of this number, we lost only 1,100. All these patients were both physically and morally strong; most of them belonged to the old guards, picked men, who for many years had been accustomed to victory, but they had been exposed to privations, and to defeats besides; and they were now beaten by men whom they had always seen fly before them, and their *morale* was profoundly affected. Who would have dreamed of treating such men with bleeding and other depletory measures? We put almost every one of them on a generous treatment, and administered wine, camphor, musk, &c.

You will perhaps object that these cases were examples, not of genuine typhoid affection, but of nosocomial typhus, and what is suited to the one is not the proper treatment for the other disease. Do not deceive yourselves upon this point; it is all the same disease: the essence of both is the same; they only differ in degree."—*Gazette des Hôpitaux*.

PATHOLOGY OF INTERMITTENT FEVERS.

In a work published last year in Paris, and which has been very favourably noticed in some of the French journals, "*Traité des Fievres ou Irritations Cerebro-spinales intermittentes*," by Dr. Maillot, lately one of the physicians of the French army in Algiers and now professor of medicine at Metz, the doctrine that the primary seat of the morbid action in agues is in the nervous centres is maintained with great ability, both by reasoning on the symptoms of the disease, and by the more sure test of necroscopical examination. Several dissections are reported, and the lesions of the cerebro-spinal axis are described with great accuracy. Other writers, before M. Maillot, have adopted somewhat similar views; and some have gone so far as to define an intermittent fever to be a periodic cerebro-spinal irritation; but to him is due the merit of having illustrated this position by post-mortem researches.

That an intimate connexion exists between intermittent fevers and various forms of neuralgia is sufficiently obvious from the genuinely periodic character of numerous cases of the latter disease. It is scarcely necessary to add, that the same remedy, bark, which is a specific for the one, affords as infallible relief in the other. The analogy therefore between ague and neuralgia affords much curious matter for speculation; and when we call to mind that so many of the worst cases of the latter disease are unquestionably connected with some affection of the nervous centres, at a distance therefore from the seat of the actual pain, we are to a certain degree led to suspect that a similar lesion may possibly give rise to that singular series of phenomena which constitute a paroxysm of intermittent fever.*

ON THE ORIGIN OF CANCER IN THE VEINS.

Dr. Langenbeck, of Gottingen, informs us that he has been led by numerous microscopical examinations of diseased tissues to the belief that the seat of cancer exists very frequently in the venous system. He is however not ready to assent to M. Cruveilhier's opinion, that cancer is in every case developed primarily and essentially in the veins. In two cases of cancer of the uterus, followed by cancerous formations in the lungs, he found within the pulmonary veins carcinomatous matter—recognizable with the microscope by its peculiar cellular form—either free, or adhering to the parietes of the vessels. The molecules of the cancerous matter, carried along in the venous stream, may be arrested at any point, and there become developed, and acquire an increase, just in the same manner as any other organic molecule which, under a cellular form, is augmented in volume—as proved by the observations of Müller, Schwann, and other physiologists on cellular productions (*êtres*) of the vegetable as well as of the animal kingdom.

The cancerous elements may find their way into the circulating fluid in three different ways;—either they may be engendered in the blood itself, and, being carried along with it, are at length stopped at some point where they become developed; or a cancer may be formed in some of the solid tissues, and a portion of the fluid with which it is impregnated becomes absorbed by its veins or lym-

* We may refer the reader for some excellent remarks on the analogy between intermittent fever and neuralgia, to Dr. Billing's admirable *First Lines*—a work in which there is more original thought than in any other we have met with for the last twenty years.—*Rev.*

phatics, and is thus conveyed into the circulation, giving rise ultimately to the formation of new cancerous growths; or, lastly, cancers already ulcerated may corrode the veins or lymphatics of the part, and thus the cancerous cellules (which are each of them germs of new cancers,) may be introduced into the current of the circulation.

The author admits that he has not been able to demonstrate experimentally in any case the primary formation of cancerous cellules in the blood; but, judging from numerous microscopical examinations of the blood in persons already affected with cancer, he thinks that such development is highly probable.

As to the second and third modes of explanation, it is to be remembered that the internal surface of veins, which arise from any organ affected with cancer, is very generally found corrugated, and more or less morbidly altered: thus the disease is apt to be developed in the veins of the liver, if the primary evil has its seat in the extremities of the vena portæ; and in the veins of the lungs, when it is *en rapport* with the two venæ cavæ.

In two cases of cancer of the uterus, the author has seen, within the veins of the pelvis, the cancerous matter of *Cruveilhier* under the form of minute grains or cellules of coagulated fibre of about double the size of pus-globules. In the blood in the iliac veins also, as well as in the inferior cava and the right cavities of the heart, there were observed here and there, by means of the microscope, cellules inclosing nuclei of a yellowish colour, and numerous granules like those which were found in the pelvic veins; in the capillaries of the lungs too the carcinomatous granules were very abundant and were more adherent to the walls of the vessels than elsewhere; and in the pulmonary parenchyma itself new cancerous foci were discovered. In reference to these facts, the author makes the curious remark, that "the cancerous germs or cellules transported to another organ are there developed into a voluminous cancer, just as the germ or ovule of the ovarium, when conveyed into the uterus, becomes developed into the fœtus." In short, he looks upon the cellules of cancer as veritable organised beings, which only require to be fixed in a suitable place to develop and multiply themselves; and he therefore so far agrees with those writers who have designated cancers "parasitical tissues."—*Schmidt's Jahrbucher*.

ON THE SEAT OF GONORRHOEA IN WOMEN.

M. Gibert, in a memoir recently read before the Academy, thus expresses his opinion.

..... "In women, as in men, the seat of election of blenorragia is the meatus urinarius; but in all the cases, where we have been able to use the speculum, we have observed, at the same time, a uterine discharge co-existing with the urethral flux, and usually remaining for a length of time after this (the latter) has ceased; so that, in my opinion, we must regard the cervix uteri as the principal source of the blenorragia in women.

Several modern writers, deceived by a superficial observation, have most improperly designated the disease by the term of vaginitis. Now in a large majority of cases of gonorrhœa, the vagina remains unaffected (*étranger*), and if it occasionally is found to be reddened and inflamed, this is only temporary, and speedily subsides by rest and cleanliness. It is only in rare and exceptional cases that we observe a milky or puriform discharge proceeding from the mucous membrane of the vagina. On the contrary, in every woman, who has contracted gonorrhœa, there exists during the first two or three weeks a characteristic flow of pus from the urethra; and subsequently a discharge comes from the cavity of the cervix uteri, and this usually lasts for a length of time after the urethral dis-

charge has ceased, and ultimately cannot be distinguished from ordinary leucorrhœa or fluor albus.".....

"Out of 216 cases of gonorrhœal flux in the wards of our hospital of Loureine, a great many of which were of several weeks' standing at the time of their admission, we have been able most distinctly to make out the presence of urethritis in 88, and the presence of any affection of the vagina in 40 cases only; and, no doubt, the number of the former would have been much larger if the examination had taken place at an earlier period of the disease; while in reference to the latter number it is to be observed that in many of the cases the redness of the vaginal mucous membranes very quickly disappeared."

M. BEAU'S NEW THEORY OF THE SOUNDS OF RESPIRATION.

"The object of the present communication is to support with new facts the theory which I proposed in 1834, (Archives Generales) as to the cause of the respiratory sounds, and to show the various applications of which it is susceptible, by passing in review all the normal and abnormal sounds produced in the larynx, the bronchi, and the lungs. This theory rested on the following two propositions.

1. There is produced in the superior respiratory passages a sound or murmur which resounds in the pulmonary vesicles, the trachea, the bronchi, the caverns, and which, in consequence of this resonance, is the only cause of the different sounds, known under the names of the *vesicular*, the *tracheal*, the *bronchial*, the *cavernous*.

2. Every sound produced in the superior respiratory passages must resound in the bronchial tree with its proper character and its own degree of intensity.

These two propositions were deduced from clinical observations and from several experiments, of which the following are the chief:—

1. When the superior sound is suspended,—and this may easily be done by instinctively dilating the superior respiratory passages,—the vesicular, tracheal, bronchial and cavernous sounds can no longer be heard. The breathing, although now very tranquil and silent, goes on as usual; but if we did not feel under the ear the thoracic parietes alternately rise and fall, we might suppose that the person did not breathe.

2. If we suspend the superior sound during one only of the respiratory movements, then the vesicular, tracheal, bronchial and cavernous sounds are found to be suspended during that movement, while it is still audible during the other.

3. If we produce a whistling sound either during respiration or expiration, the same kind of sound is heard in the bronchial tree.

Dr. Spittal has in part adopted these views, and has published the results of several experiments which he has made. He concludes:—It is therefore reasonable to admit that the sound of the superior respiratory passages exerts, and must exert, a certain influence on the sounds of respiration, known under the names of vesicular, bronchial, cavernous, amphoric. But the preceding experiment is not of a nature to demonstrate that the superior sound is the only source of the different sounds which have been enumerated, although we are strongly inclined to think so."*—*Edm. Med. & Surg. Journal*, Jan. 1839.

*The first idea of this theory belongs to M. Chomel, who, in 1827, used the following words in treating of the blowing sound which accompanies pleuritic effusions:—"Leannec is of opinion that the sound of bronchial respiration is owing to the inspired air being stopped in the bronchi, which are compressed and flattened by the effusion into the pleura. But then how should this sound

It has been objected by MM. Raciborski and Stokes of Dublin, that the superior respiratory sound is often suspended, and yet the vesicular murmur is still audible. It is quite true that such seems to be sometimes the case; but in truth it is not, and the mistake arises from want of due precision in making the experiment. The superior sound, although scarcely perceptible, is not completely suspended; and the remnant of it, so to speak, however feeble, is still made resonant in the pulmonary vesicles. To avoid all chances of deception, it is necessary to perform the experiment in a very quiet room; and moreover another person should auscult the larynx, to ascertain whether the superior sound continues or not, while the experimenter is listening to the pulmonary sounds. By attending to these rules, we shall find that no vesicular murmur can be detected without a superior sound being present, and that these two sounds are always proportionate in distinctness. We are therefore entitled to conclude that the vesicular murmur is the result not of the friction of the air in the pulmonary cells as supposed by Laennec and most writers, but of the resonance of the superior sound transmitted along to them. This view is confirmed by the following experiment: adapt a pig's bladder, moistened, to the end of the tube whose diameter is the same as that of the trachea, and then put the other end of the tube into the mouth, and after closing the nostrils breath only into the tube and bladder; the bladder is observed to be alternately distended and relaxed. The person can, at will and alternately, suspend or exaggerate the superior sound. If the thorax be ausculted at this time, we find that the pulmonary sounds are alternately null or exaggerated, and yet, in these successively different conditions, the bladder does not exhibit any difference in the extent or rapidity of its movements of distention and relaxation. The inference therefore is fair that the air is sent as quickly, and in as large a quantity, into the pulmonary vesicles when the vesicular resonance is audible, as when it is not.

The question to be now considered is, where is the origin or seat of the superior respiratory sound, which, when re-echoed in different parts of the bronchial tree, gives rise to all the sounds emitted by the organs of breathing, alike in health and disease? The orifices or contractions of the respiratory passages capable of causing vibrations in the air which traverses them, and of producing the superior sound, are five—the lips, the nostrils, the isthmus of the pharynx, the glottis, and the upper opening of the larynx.

1. *The Lips*.—If we open the lips so that the interval between them represents an area of 14 or 15 centimetres, there is produced a sensible sound on inspiration and expiration. The sound increases, if the interval is straightened; and it is no longer audible, when it exceeds 15 centimetres.

2. *The Nostrils*.—They are susceptible of only a slight contractility. When they are dilated as much as possible, and the lips are closed at the same time, there is scarcely any sound heard during breathing. If, on the other hand, they are contracted, so that the total area of the two orifices is below 14 centimetres, we perceive a sound, the intensity of which is proportionate to the degree of the contraction. With respect to the posterior openings of the nostrils, as they are immoveable, and moreover considerably larger than the exterior openings, the air must traverse them without occasioning any sound.

3. *Isthmus of the Pharynx*.—This orifice, of a considerable extent, may be

be heard during expiration? Is it not more probable that it is produced in the larynx and the back of the mouth, and that it is transmitted to the ear in the same manner as the voice, which is produced and articulated in the same organs?"—*Dict. de Médecine*.

contracted by lowering the velum palati, and by elevating the tongue. It requires, however, a certain practice to contract it so that the passage of the air through it gives rise to a sound.

4. *Orifice of the Glottis*.—This opening is essentially moveable; its area, when the inferior vocal chords are separated from each other, is about 15 centimetres. This area may be progressively diminished until it becomes completely closed; and it may be so much dilated that it equals that of the larynx. When the area of the glottis is normal, a distinct sound is produced by the air traversing it: its intensity increasing or diminishing, according as this is contracted or dilated.

5. *Opening of the Larynx*.—The area of this orifice is about 40 centimetres. If the lips, the pharynx, and the glottis, be dilated as much as possible, and the respiratory rhythm, be normal (16 inspirations in the minute), then no sound will be produced in the upper respiratory passages. But if we quicken the breathing beyond 45 inspirations in the minute, there is produced a sound, whose greatest intensity is audible at the upper part of the neck, and which can be produced only at the opening of the larynx. The lips, pharynx, and glottis being dilated as much as they can be, the opening of the larynx, which is immoveable, becomes the most contracted point of the respiratory passages: and this orifice which, in consequence of the extent of its surface, gives out no sound when the air traverses it slowly, produces a distinct one whenever there is any disproportion between the volume of the air admitted and the area of the laryngeal aperture—such as takes place whenever the breathing is much quickened.

From what we have now said, it would seem that as it is the *glottis* alone, which continually presents an obstacle to the transmission of the air, causing it to enter into vibrations, it must be to it that we must refer the origin or seat of the upper respiratory sound. Let us remark also that the seat of this sound, being the nearest possible to the lungs, is thereby well fitted to produce a resonance of it along the bronchial tree; whereas other sounds, and chiefly the nasal and labial ones which are the outermost of all, reach the interior of the chest with difficulty. It is this *glottic* sound, therefore reverberated in the air-tubes and pulmonary vesicles, that gives rise to all the various sounds of respiration described by auscultators. It is a double sound, at one moment inspiratory, at another expiratory. To study these properly, we must not be satisfied with listening at a distance; we should auscult the larynx itself. The relative duration of the two *glottic* sounds is determined by the duration of the corresponding respiratory movements of the chest.

And therefore, as the act of inspiration occupies in health nearly double the time of that of expiration, it follows that the duration of the inspiratory glottic sound is about twice as long as that of the expiratory sound. Again, the intensity of the former is notably less than that of the latter: a circumstance which confirms the truth of the statement by Le Gallois, that the glottis is more contracted during expiration than during inspiration. (These remarks, be it remembered, apply chiefly to the adult.)

The two *glottic* sounds are audible at a considerable distance. By means of auscultation, we may perceive them on the back of the neck, and even on the top of the head: but it is in the trachea and in the lungs that their resonance presents the most interesting phenomena. This resonance is nearly as great in the trachea as it is in the larynx; but it becomes less and less distinct as we recede from the glottis and approach the lungs; and in these it not only diminishes from the upper to the lower part of the chest, but its character is very sensibly altered. It is no longer a blowing sound, but rather a diffused murmur, caused by the vibration of the air in the innumerable minute divisions of the bronchi, and in the pulmonary cellules.

M Beau, after alluding to the well-known circumstance that the resonance of the expiratory sound in the lungs is not only shorter, but also much less distinct and of a less marked vesicular character than that of the inspiratory sound—although the former is louder in the larynx than the latter—explains the cause of this difference in the following sentence :—

“ This very marked difference of intensity between the resonance of the inspiratory and that of the expiratory glottic sounds, cannot be well explained by M. Laennec’s theory, according to which the vesicular murmurs are supposed to be directly produced by the friction of the air along the bronchial mucous membrane. For it may be asked, why should the air, on leaving the pulmonary vesicles, not cause as much friction, as on entering them ! In truth, the friction must surely be greater, seeing that the act of expiration is performed more quickly than that of inspiration ; and if so, then the vesicular murmur ought to be stronger—which however is contrary to fact.”

The Voice.—The voice is the distinct sound produced by the expired air passing through the contracted glottis, and reverberating outwards. But while its chief resonance is outwards, it also penetrates, at the same time, backwards, and resounds along the whole extent of the bronchial tree, in a direction contrary to the current of the air.

It is this inward resonance of the voice that at present we have to consider. When we auscult the voice over the larynx and trachea, we hear each syllable distinct and well articulated, but over the chest the resonance much less clear ; there, it is rather a confused and prolonged murmur. The reason of this difference is owing to the trachea being superficial, with nothing to intervene, whereas the bronchi are deep-seated and surrounded more or less completely with the soft parenchymatous tissue of the lungs : and hence, as the air is quitting the vesicles at the moment that the vocal resonance takes place, it must follow that the sound thus produced will be more or less confused and deadened.

This is so true that, when the voice is produced during inspiration—which may be easily done after a little practice—the vesicular resonance of the voice is found to be much more complete and more distinct than it is during expiration.

From these observations it must be apparent that there is a much greater analogy between the voice and the ordinary sounds of respiration than has been usually supposed ; both are produced in the glottis, and both result from the vibration of the air passing through the vocal chords.

They are both also, to a certain extent, under the influence of the will, and are therefore susceptible of increase and diminution ; but the voice is by much the loudest in its resonance, because not only is the aperture of the glottis more contracted, but the volume of the air is expelled with more force during utterance, than during ordinary respiration.

We shall now follow out this analogy, by tracing the effect of different diseases on those two kinds of *glottic* sounds.

With respect to the voice, it is well known that, whenever the pulmonary parenchyma becomes impermeable to the air, either from hepatisation, or from tubercles, or from pleuritic effusion, &c. the vocal resonance becomes louder and tubular—this is called *bronchophony*.

A still louder and more distinct resonance is heard when the voice is reverberated in a cavity—this is *pectoriloquy*. These sounds are only two different degrees of a circumscribed and tubular resonance of the voice, and they are chiefly dependent on the diameter of the normal or the abnormal cavities which produce them. That genuine pectoriloquy will sometimes proceed from a simple bronchus, especially if it be dilated and surrounded with hepatised tissue, when there is no excavation in the lungs, is confirmed by daily observation. On the

other hand, a cavity may exist in the lungs, and yet there may be no distinct pectoriloquy, but only a bronchophonic resonance.

With respect to the other abnormal resonance of the voice, *ægophony*, we must confess that it is not easy to explain it. This sound is most frequently perceived when there is an effusion into the cavity of the pleura. Occasionally, however, it is heard when the trachea or one of the large bronchi is compressed by a tumor, such as an aneurism of the aorta, &c.

The *ægophonic* resonance of the voice is also heard in some cases of bronchocele.

We proceed now to consider—

The Glottic Sounds in an Abnormal Condition.—They may be increased, diminished, or perverted.

Increased Sounds.—Whatever causes an unusual disproportion between the aperture of the glottis and the volume of the respired air, has the effect of increasing the force of the glottic sound.

This disproportion exists—1, when the air traverses the glottis very rapidly—and 2, when the glottis is more than usually contracted. The *first* of these two conditions accounts for the greater intensity of this sound in children, and in some women, also after exercise, and in diseases which affect the breathing, such as pneumonia, pleurisy, consumption, &c.; and the *second* explains the occurrence of the same phenomenon in cases of spasm of the glottis, which is so frequent in hysterical patients.

We have already seen that, when the breathing is quickened beyond forty inspirations in the minute, there is produced an abnormal sound at the superior orifice of the larynx. This sound is added, in this circumstance, to the ordinary glottic sound; but the former is the weaker of the two, in consequence of the upper opening of the larynx being less contracted than that of the glottis itself. In certain cases, however, when the laryngeal opening is much contracted, as in œdema of the aryteno-epiglottideal ligaments, it becomes very loud. Other pathological states may induce an abnormal contraction in certain points of the larynx or trachea, and give rise to sounds, whose character is similar to that of the glottic sound.

In this way, sub-mucous abscesses, or swelling of the laryngeal cartilages, or the presence of tumors in the neck, &c., may be accompanied with such sounds in particular parts of the windpipe. These different sounds, altogether abnormal in point of situation, may have the usual character of the normal glottic sound; or they may be associated with other sounds, which then more or less completely disguise it.

Diminished Sounds.—The glottic sounds are diminished in intensity, or even almost extinguished, in circumstances the very opposite to those mentioned in the preceding sentence, viz.—1, when the respiration is very slow, and the air passes through the glottis very gently, as during syncope; and, 2, in certain varieties of hysteric dyspnoea, where the glottis is unnaturally dilated.

Perverted Sounds.—It often happens that the sounds, produced either at the glottis, or at some abnormally contracted part or accidental opening of the larynx or trachea, lose their usual blowing character, and acquire a certain snoring or whistling tone:—we shall allude to these varieties by and bye.

If we examine the relative *intensity* and *duration* of the two—the inspiratory and the expiratory—glottic sounds in disease, we shall find that the latter one continues, as it is in health, always stronger than the former. There is scarcely an exception to this remark, except in cases of œdema of the glottis, where the inspiratory is always much louder than the expiratory sound. As to the relative

duration of the two, we meet with the following differences:—1. The respiratory sound is, as in health, longer than the expiratory one; but it may be so in a very abnormal ratio, such as we observe in certain spasmodic states of the glottis, and in œdema of the aryteno-epiglottideal folds; 2, in other cases, the expiratory is much longer than the inspiratory one, as in common asthma; and 3, the two sounds are sometimes of equal duration, as in all cases where the respiration is quickened, in pneumonia, the fits of ague, &c.

"From what has now been stated," says M. Beau, "it follows that, whenever the glottic sound is very feeble, or altogether extinguished, its resonance must in like manner be the same. We are not, like Laennec, to conclude from this, that in such circumstances the air is received very feebly, or not at all, into the lungs, but only that it reaches them without producing any sound at the glottis. When, on the contrary, the glottic sounds are exaggerated, the resonance will be so likewise—the result of the passage of the air through the glottis being more difficult, and therefore more noisy, than in health."

He objects to the common explanation given of the occurrence of the *puerile* respiratory sound during pneumonia in those parts of the lungs not affected with the inflammation. "To admit," says he, "that a larger quantity of air than usual enters the sound parts of the lungs, we should be prepared to shew that in such circumstances the respiratory movements, the extent of which must be regarded as the strict measure of the quantity of inspired air, are of unusual amplitude. Now, in truth, we do not observe anything extraordinary in these movements on the healthy side of the chest; and on the inflamed side they are almost suspended, paralysed, so to speak, by the acute pleuro-pneumonic pain. And yet, even on the affected side, where the respiratory movements are so obscure, there are frequently considerable portions of the lung which are not inflamed, and which nevertheless give out a puerile murmur, the intensity of which is quite as great as that heard on the healthy side."

M. Beau accounts for the occurrence of the puerile respiration in pneumonia by the greater intensity of the *glottic* sounds, in consequence of the more rapid passage of the air through the glottis. The breathing becomes more frequent, to compensate for the loss of function in the inflamed parts of the lungs: it is only in this sense that we can justly say that the healthy parts make up for the deficiency occasioned by the impermeability of the inflamed portion. The same cause—the frequency of the respiration—which produces the puerile murmur in young children, gives rise to it not only in pneumonic patients, but also after exercise, in phthisis, during the paroxysm of agues, in many fevers, in spasm of the glottis, and in various diseases and in accidental openings of the larynx and trachea, &c. In all these cases, it is dependent upon the greater force of the resonance in the pulmonary vesicles of the exaggerated laryngeal or glottic sounds.

This is the proper place to allude to an important mistake which we find in the great work of Laennec. It is there stated that, "whatever be the efforts of inspiration made, a healthy adult cannot give his respiration that degree of intensity which it had in infancy." Now so far is this from being the case, that we do not hesitate to assert the very contrary, and that in all inspirations, short or long, a healthy adult may give to his pulmonary sounds a puerile intensity. All that is necessary for this purpose is only to increase the force of his inspiratory glottic sound—which it is most easy to do. It will perhaps be objected to this statement that Laennec has most distinctly denied this, for in one part he says:—

....."At other times patients, imagining that we are asking of them something extraordinary, endeavour to dilate the chest with all their power, or rather they make several deep inspirations, without expiring in the interval, and in such cases we scarcely hear any sound at all." This remark of Laennec is quite true; some patients, when told to breathe deeply, make several strong,

almost convulsive, inspirations. But if we attend minutely, we shall find that these exaggerated inspirations are accomplished with a dilatation of the glottis, which has the effect of at once silencing the *glottic* sound, and therefore its resonance or reverberation in the vesicles of the lungs is no longer audible. Laennec himself seems to have felt the difficulty of explaining the fact in question; for he admits, a few lines subsequently, "that the pulmonary sounds imply the existence of an action proper to the lung itself, and which is not necessarily connected with a deep inspiration." The theory of Laennec on the production of the respiratory murmur, which leaves, as we have seen, several facts quite unexplained, is not more fortunate in accounting for the *puerile* sounds. To reconcile them with this theory, we have been called upon to admit the gratuitous hypothesis, that there is a greater penetration of the inspired air into the vesicles of a healthy, than of an inflamed, portion of lung. But how shall we account for the well known circumstance of the vesicular sounds being so much exaggerated in certain cases of contraction of the larynx or trachea, and also in cases of accidental opening in these tubes? The explanation of Laennec here quite fails. On the contrary the *theory of resonance* which we have proposed, indicates very satisfactorily the mechanism of all exaggerated pulmonary sounds, by showing that they are the result of whatever increases the force of the laryngeal or upper respiratory sound. It is therefore with no little surprize that I have observed, says M. Beau, that Dr. Stokes of Dublin, in his recent work on the diseases of the chest, objects to my theory on the ground that it does not give any explanation of the *puerile* sounds. I cannot understand the ground on which this author makes his objection.—*Archives Generales*.

Remark.—As the memoir of M. Beau seems to us one of the most valuable that we have met with for a long time in the French periodicals, (the contents of which are usually so unimportant) we have been induced to give a very extended abstract of it. A continuation of it is promised by the ingenious author.—(Rev.)

DISPARAGEMENT OF AUSCULTATION, BY M. LUGOL. ORIGIN OF TUBERCLES.

M. Lugol, during the course of last summer, delivered a series of lectures on scrofulous diseases. The following is an extract from the fourth lecture on the formation of tubercles in internal organs:—

..... "The numerous checks and repeated deceptions to which physicians are daily exposed in the diagnosis and treatment of tuberculous diseases, do they not prove that it is necessary to leave the beaten track of enquiry and pursue some other which is less fallible? You all know that auscultation and percussion are useless in the diagnosis of pulmonary tubercles. Both alike insufficient to announce the commencement of the mischief, they are superfluous at the very time that they become capable of indicating the presence of the tubercles; for then these are discoverable by other means, and alas! are too far advanced in their development to warrant our hopes of arresting their progress—at least in the generality of cases. I will even go a step farther, and say that the unlimited confidence placed by the greater number of practitioners of the present day in auscultation and percussion, has had the effect of too often inspiring a fatal security in many tuberculous diseases, which are thereby allowed to advance in their progress, until this is revealed by physical phenomena at a period when remedial measures have but little chance of effecting any good.

"But what are the means, you will say to me, that are to be substituted in the room of auscultation and percussion? I answer, gentlemen, induction. Examine by these boasted methods this patient, and tell me what results you

obtain. Negative results, you will reply. And yet I maintain that he is tuberculous ; for his father, his mother, and his brothers have all died of tuberculous disease ; and he himself is affected with it in his chest at the present moment. Believe me, this plan is much less deceptive than the other one. I tell you, the inductive method cannot mislead you ; for nature is invariable in its causes as in its effects ; and the external signs of tuberculous scrofula must give you assurance that similar morbid productions exist in internal organs, especially in the lungs.

It is by viewing the question from this elevated point of view, by studying it in all its *ensemble*, that you will be best enabled to comprehend it in its details ; and these cannot be understood by the special methods of examination which have been so much recommended of late years.

The tuberculation of internal organs exhibits in its development the same phenomena as tubercles which are outwardly situated—there is no pain, and nothing of mechanical derangements."

In a subsequent part of the same lecture, M. Lugol thus treats of *Tubercles of the lungs*. "The existence of tubercles in the lungs is so frequent, that I must admit that they are present in all scrofulous persons. You know that all, or almost all, patients, who have pulmonary tubercles, are, or have been at some time, affected with tubercles in the neck ; the majority have had during infancy this external sign of scrofula ; while others have had it at a later period of life. I believe that pulmonary tubercles frequently exist in early youth : but it is chiefly about the age of puberty that they are apt to be developed. Puberty in truth seems to have a fatal specific influence in promoting their development ; and in our wards at the present moment there is a case which seems to confirm this opinion. A scrofulous patient, who, although 22 years of age, exhibited none of the usual characters of marriageableness ; he has just died ; and in him no tubercles were found in the lungs.

Sometimes however pulmonary tuberculation seems to disappear about the period of puberty, and, ceasing for a number of years, it does not again develop itself perhaps until the 40th or 50th year of life."

M. Lugol subsequently alludes to the probable origin or *genesis* of tubercular formations. He regards them as *parasitical organs*, the development of which takes place *par intus-susception*. (Query. Should not this be rather *intus-conception* ?) "They are not," says he, "mere degenerated organs, as many authors suppose ; for if they were so, we should be able to distinguish the tissues of these organs in the tubercles, while they are still incipient. Far from this being the case, we observe that a tubercle is always the same from the very commencement of its formation, and that the organs, in which it is developed, impress no modification upon it, except perhaps upon its size and form."

After stating his opinion that inflammation does not engender, but merely promotes, the development of tubercles, he adds :

"It is impossible to see any other thing in tuberculation than a sort of parasitical function, which establishes itself by the side of some normal function, and to its detriment. The *epigenesis* is not more difficult to understand than that of hydatids, intestinal worms, &c. with which it has a great affinity, and which are often found re-united in tuberculous children. A great analogy, I repeat, exists between the creation of lice, intestinal worms, and tubercles. All three are subject to *peripeties*, which seem to have some connexion with certain individual and atmospheric conditions. I have frequently seen spontaneous and abundant generations of lice take place in persons, who have subsequently died of tuberculous disease."—*Gazette des Hôpitaux*.

ORFILA'S RECENT EXPERIMENTS ON POISONING.

The following summary of the distinguished toxicologist's researches, which have been detailed at greater length in the two last Numbers of the *Medico-Chirurgical Review*, is taken from a recent number of the *Moniteur*.

M. Orfila commenced his experiments to-day, in one of the amphitheatres of the Faculty of Medicine, before the members of a Committee of the Academy and a numerous audience. The Professor made a number of experiments on poisoning with arsenic and with tartrate of antimony, and, by the programme which he distributed, he undertook to prove—

1. That these poisons, when introduced into the alimentary canal, or inserted into the subcutaneous cellular substance, are absorbed, and mingle with the blood, and are thus carried through all the organs of the body.

2. That they remain for a certain time in the substance of the different viscera and of the muscles, where their existence can be demonstrated by chemical processes ; but that, from the time of poisoning, a portion of that which has been absorbed leaves these tissues, and is eliminated by the urinary secretion.

3. That this elimination, which is much more rapid in the case of the antimonial than in that of the arsenical salt, continues during several days, until the tissues in question have been completely freed from the presence of the poison.

4. That it is therefore advantageous, and even indispensable, in the treatment of poisoning from these salts to promote the urinary secretion.

5. That it is possible in most cases to distinguish whether the arsenious acid and the antimonial tartrate, which are withdrawn from the viscera, have been absorbed during life, or have entered the body through the *cadaveric imbibition* after death.

6. That the most convenient process for detaching minute quantities of these absorbed poisons consists in destroying the major part, or the entire, of the organic matter of the viscera and muscles, by carbonising them with pure concentrated azotic or nitric acid, and introducing the products into Marsh's apparatus, somewhat modified.

7. That it is always easy to distinguish arsenic from antimony by the form of the spots left on the vessel, and at the same time to ascertain that these spots do not proceed either from the apparatus itself, or from the chemical tests employed.

8. That there exists in the bones, both of man and of certain animals, an arsenical compound insoluble in water.

9. That from the muscular flesh of the human body may be extracted a matter which M. Orfila believes to be formed of exceedingly small proportions of arsenic, sulphur, and an organic substance.

10. That in the earth of some cemeteries there are found quantities, exceedingly small indeed but appreciable, of arsenic, which boiling water will not dissolve.

11. Finally, that it is easy, in a legal enquiry, to avoid those errors which might appear, at first sight, likely to arise from the admitted fact of the presence of arsenic in human bones and muscles, and in the earth of certain cemeteries.

M. Orfila then proceeded to make his experiments. Several dogs were poisoned ; in some the salts were introduced into the stomach, and in others they were inserted under the skin. The latter method proved most rapidly fatal. The following results were obtained.

1. The urine of the dogs which had been poisoned yielded, when submitted to Marsh's apparatus, distinct traces of the metallic salts ; while that of other dogs to which no poison had been given, did not exhibit any traces of them.

2. A small portion of the liver of the poisoned animals—having been pre-

viously charred with nitric acid, and the residue introduced into the apparatus—yielded numerous spots of arsenic; while the entire liver, spleen and heart of a dog killed by hanging, on being submitted to the same chemical treatment, did not exhibit any traces of the metal.

ON GASTROMALACIA, OR SOFTENING OF THE STOMACH IN INFANTS.

It is scarcely ten years ago since the medical journals began to report for the first time any cases of this disease; although Dr. Jaeger of Stuttgart drew the attention of physicians to it in 1811. (Vide Hufeland's Journal for 1811 and 1813.)

In the Summer of 1831 it shewed itself, with all the characters of an epidemic, at Gottingen and the adjacent districts; and its symptoms were then so well marked that, since this period, it has been impossible to mistake it for any other disease, even during the life of the patients.

Dr. Winter has published an excellent work on Gastromalacia, for which he received in 1833 the prize of the Royal Scientific Society of Gottingen; it was published in the succeeding year, and has contributed much to our more accurate knowledge of its pathology. The author of the preceding and following remarks, Dr. Iselin of Mullheim, has met with twelve cases of the disease, and having also perused all the descriptions given of it by different writers, he is now induced to submit them to the notice of his professional brethren.

Description of the Disease.—According to my observations, says he, infants under twelve months of age are most subject to softening of the stomach; but it is certain that it is occasionally met with at any period of youth up to puberty.

Cammerer indeed (*Versuche uber natur der Krankhaften Magenerweichungen*) says that he has seen it even in adults. However this may be, it is admitted by all pathologists, that it is much more frequent during the first year than at any other period of life. With respect to the duration of the disease, this is found to vary very considerably; sometimes it proves fatal within twenty-four hours, while in other cases it has lasted for several weeks. According to its different characters, the disease is either *idiopathic* or *symptomatic*. Idiopathic Gastromalacia is either *acute* or *subacute*. In the first, the infant is seized with high febrile heat, vomiting and purging of serous acid matters; the features shrink, the eyes are sunken, and life is extinguished within twenty-four hours from the attack. In the *subacute* form, the disease commences usually with purging and generally also with vomiting; the febrile re-action of the system may be inconsiderable; and hence the symptoms may continue for several weeks.

Symptomatic Gastromalacia is usually preceded either by hydrocephalus, or by an acute exanthematous disease, or by some disease of the respiratory organs. In these cases, the course of the disease is almost always very rapid.

Symptomatology.—The disease exhibits two distinct degrees or stages—that of irritation, and that of palsy.

First Stage.—After two or three days of restlessness and general distress, a smart fever sets in, accompanied with great thirst, loss of sleep, and violent vomiting which cannot be checked. These symptoms are followed by a diarrhoea, at first of grey-coloured thickish matter, and then of a yellowish serosity which is found to be very acid. The face becomes sometimes very pale, at other times it is red and flushed; the features are often spasmodically con-

tracted, whenever the bowels are purged, or when the belly is pressed upon; there is usually complete anorexia, and a greater or less degree of tympanitic fulness. The whole abdomen, and more especially the ventricular region, is felt to be very hot, while at the same time the extremities are usually cold; the infant is continually crying and moaning; and often we observe partial sweating on the surface, especially on the back of the head, which is in general very warm.

The *Second Stage* is marked by frequent accessions of sudden prostration, amounting almost to a state of syncope; the breathing is short and much distressed; the pulse is very frequent and irregular; the child no longer cries, but keeps moaning in a sort of stifled manner; the pallor of the face increases, and the eyes become sunken; the sweats are more general; the belly remains warm while the extremities are cold; slight convulsions come on; sometimes there is squinting, and at other times the eyes are fixed, and only half covered with the lids. The purging and vomiting often subside or cease altogether, and the appetite returns for some time before death. When the child drinks, a peculiar noise is heard in the belly; aphthæ form in the mouth; the face acquires a bluish hue, especially around the mouth and eyes. Most frequently there is no coma, nor any loss of consciousness; but towards the close an excessive prostration, accompanied with frequent syncope and a very rapid pulse, so that death may occur without being perceived.

The *Subacute* form is usually attended with a diarrhœa, which resists all attempts to check it; sometimes vomiting is present and sometimes it is not. The course of the disease is more slow, and the child ultimately sinks, perhaps after more than once seeming to be about to recover.

The same thing happens when softening of the stomach occurs as a secondary and symptomatic disease,—in this case the symptoms become well marked only when the organ is very seriously altered.

On the whole, the tumefaction of the abdomen, and the great heat of its surface, while the extremities remain cold, are perhaps the most constant and characteristic symptoms of the disease. The former continues after death, so that the position and form of the stomach are often visible through the abdominal parietes. In addition to these symptoms, the peculiar expression of distress in the features, and the sunken state of the eyes, most striking indeed in the second stage of the disease, are rarely absent in any case.

The acute form is always attended with fever; in the chronic form, there are frequently intermissions; the groanings, the restlessness, the convulsive twitchings of the face, and the oppression, are almost constant symptoms in both.

The diarrhœa and the vomiting are, on the contrary, not so. In some cases there is constipation. The evacuations are always acid, although they vary much in consistence.

Convulsions characterise the stage of palsy; loss of consciousness is rare; aphthæ are frequent.

Anatomical Characters.—In three cases examined by Dr. Iselin, the following appearances were found.

The abdominal cavity was distended with gas, and the cellular tissue of its parietes was emphysematous; the stomach was projecting and tympanitic, and the intestines were in the same condition. In two of the cases, the stomach was perforated in three different places; in the other case, it was not perforated, but its tissue was so soft that it yielded on the slightest effort. In the cul-de-sac, especially where it is contiguous to the spleen, were observed transparent and colourless patches, on which the muscular fibres, almost in a diffuent state, were visible. The rest of the stomach was not much altered, except in the neighbourhood of the cardiac orifice.

Around the softened patches, there were distinct traces of inflammation.

The softening takes place from within outwards, and the disease seems to begin with inflammatory action; the softening and the dissolution of the mucous membrane seem to be the result of it: the muscular and the serous tunics are subsequently affected. The intestinal canal, in my examinations, exhibited several inflamed and softened spots in different places. In one case, the duodenum was completely diffuent, as well as several isolated patches in the ileum. The mesentery was always inflamed and its glands in a state of engorgement. In every one of the three cases, there were several intus-susceptions of the bowels.

The morbid appearances in the other viscera vary in different cases, none of them being constant or characteristic.

Causes of the Disease.—The *predisposing* causes seem to be—1, a cachectic state of system induced by bad nourishment, and the generation of acid in the stomach; 2, a hereditary cachexia, the result of a phthisical or other morbid condition of the mother during pregnancy; 3, dentition; 4, any sudden change in the food of the child, or weaning suddenly and at an improper time; and 5, the passions of the mother, which, by altering the properties of the milk, are so apt to derange the health of the child.

Jaeger knew a woman, who was of an impetuous character, and often suckled her children during a fit of passion, lose three of them from softening of the stomach.

With respect to the influence of poor food in inducing this disease, it is not easy to determine this influence exactly; for some children, to whom every attention is paid, die of it; while many, who are ill and irregularly fed, escape.

Perhaps the most influential exciting causes are certain, unknown indeed, atmospheric changes; since the disease has been generally observed to prevail at the same time as billous fever, dysentery, ague, &c.

With respect to the more immediate causes of softening and perforation of the stomach, John Hunter attributed it, in almost all cases, to the direct influence of the gastric juice itself, operating as a solvent on its walls after death; but this opinion, although no doubt quite true in cases of sudden death occurring during a state of health, is certainly not admissible in such cases as we have been alluding to:—the softening is the result rather of a general alteration of the organism during life.

Cammerer has shewn, by experiments on animals, that vinegar softens the coats of the stomach; and also that the contents of a softened stomach, when introduced into the stomach of another animal, have the effect of softening this last—provided the influence of the nervous system has been previously paralysed either by death, or by division of the nerves.

Jaeger also, (Hufeland's Journal for 1811 and 1813,) alludes to a chemical action of the gastric juices; but he does not believe that this action can operate as long as the stomach retains its normal condition, and supposes that some other agency must always be co-existent. The gastric juice is, according to his opinion, altered by certain morbid states of the nervous system, and in this way there is generated an acid, which has the power of softening the stomach.

Heischmann and Meckel have adopted nearly the same views—with this difference, that the former of these writers regards the spleen as the source of the formation of the acid. Lenhossek is of opinion, that the symptoms of the disease, at least in its earliest stage, are those of a cerebral affection—which acts sympathetically on the stomach, so that this organ loses its power of resisting the solvent action of its own juices; at the same time it is probable, says he, that the excess of acid, produced by the cerebral affection, acts sympathetically on the juices of the alimentary canal.

Chaussier (Bulletin des Sciences Med. No. 53,) and Laisné (Medecine Legale,) consider the disease as an erosion or ulceration of the mucous membrane of the stomach, that is incessantly increased by the contact of the ichor secreted on the surface of the ulcer.

Rudolphi, in his Grundriss der Physiologie, suggests that the stomach of infants, when it is affected with disease, is subject to a sort of putrefaction, and that the commencement of the softening is preceded by an acid fermentation.

Winter regards softening of the stomach as a disease of the general organization; and this opinion is confirmed by the existence of a number of different maladies which are often associated with it—such as the exanthemata, erysipelas, induration of the cellular tissue, jaundice, aphthæ, inflammation of the abdominal viscera, phthisis, hydrocephalus, &c.

The simultaneous existence of gastric softening, and of the diseases now mentioned, makes Winter believe that the cellular tissue should be regarded as the propagator of the morbid process; inasmuch as it contains the capillary system in which the disease begins. As to the morbid matter, which is at once the principle and the agent of this alteration, we must seek for it in the blood itself.

Dr. Iselin is of opinion that the primary cause of the disease is inflammation; but he does not adduce any facts to establish his views.

Treatment.—What we know on this subject is most unsatisfactory.

Jaeger admits that he has failed in every case, in spite of blisters, sinapisms, friction with stimulating substances, the internal use of carbonic acid gas, opium, musk, zinc, &c. &c.

Dr. Iselin says that much may be done in the early stage of the disease, that of irritation and fever, by leeches to the stomach and head, and the use of antiphlogistics. Mercury and alkaline medicines* are always hurtful, he adds, while oleaginous demulcents are very useful.

When the inflammation and fever are calmed, a derivative action to the skin should be promoted by blisters, sinapisms, &c.: astringents and bitters should be given at the same time. Might not creosote be useful?

In the majority of cases, however, no treatment is of any avail, except perhaps in protracting the morbid action.

Let the physician not be deceived by occasional intermissions of the symptoms: they are greatly fallacious, being quickly followed by all the former distress. When the stage of paralysis has come on, the case is utterly hopeless.—*Heidelberg Klinische Annalen Band. V. hefte 3.*

SURGICAL CLINIQUE OF M. LISFRANC.

Fistula Lachrymalis.

In the ward St. Louis of our hospital (La Pitié), there is a patient who else-

* From the prevalence of acid in the secretions of the stomach and bowels, we might expect that alkaline remedies had been indicated in the treatment of this disease. We can confidently state from experience, that when such symptoms as have been described by Dr. Iselin to be the accompaniments of *ramollissement* of the stomach are present, minute doses of magnesia, or of chalk or soda, with or without opium according to circumstances, will be found to be the appropriate remedies: a blister on the epigastric region at the same time should not be omitted.—*Rev.*

where has had the operation for this disease performed upon him. The canula, left in the nasal canal, has ceased to be pervious ; and, an abscess having subsequently formed at the lower part of the angle of the eye, the pus continues to escape by a small fistulous opening. The question comes to be, will it be necessary to extract the canula ? This step may be attended with great difficulty : the surgeon is sometimes obliged to desist from his attempts. In the majority of cases, it is better not to make the attempt. Ten years ago a patient, who had a canula in his nasal tube, and in whom there was considerable inflammation at the inner canthus, came under my care. I determined to extract the canula ; but, previously to doing this, I deemed it right to subdue the inflammation by applying leeches over the mastoid process and poulticing the inflamed part—as it is an excellent axiom in practical surgery always to operate on tissues that are as healthy as possible. When the inflammation was subdued, the canula became permeable, and the patient was cured after the subsidence of the swelling. In the present case, the inflammation has ceased, but a fistula remains. Emollient injections have been ordered to be used ; and, in the course of two or three days, we shall pass a stylet along the canula to clear it. If the ulcerated opening does not heal, we shall touch it with the nitrate of silver ; but it will most probably cicatrise, as soon as the tears do not pass through it. Six days afterwards this prognosis was verified, and the patient left the hospital cured.

Phagedenic Ulcers.

In the two cases at present under treatment, remember (says M. Lisfranc, addressing his pupils) that we have not limited our treatment to merely applying the liquid proto-nitrate of mercury to the surface of the sore. In these, as in all other similar, cases, when the ulcers have an inflammatory appearance, we premise the detraction of blood from the arm ; and thus we obviate the increase of irritation and general fever that might follow the application of the caustic.

By adopting this line of treatment, the ulcers in these two cases speedily advanced to cicatrization ; but then, without any discoverable cause, they again relapsed to their former condition. Subsequently however they have re-began to heal : and little now remains for us to do ; for both will speedily be well. In one of the cases, the amendment may be dated from the period when he became affected with erysipelas, which was epidemic in the hospital at the time. The inflammatory action seems to have changed the mode of vitality in the tissues. Now the operation of a caustic, applied lightly over the surface of a part only of an unhealthy sore, may be somewhat similar to that induced by erysipelatous inflammation. Our object is not to produce an eschar, but to modify the vitality in the parts around the ulcerated tissues.

White-Swelling of the Wrist with Fistula.

Amputation of the fore-arm had been recommended to the patient at another hospital. M. Lisfranc, however, put him on a course of the muriate of barytes, according to the formula of M. Pirondi ; and under this treatment the case eventually recovered. From the two fistulous openings over the carpal joint, several small portions of decayed bone escaped ; and, in the course of a short time, no traces of any denuded bone could be detected by the probe.

Engorgement of the Mamma in a Man.

This is a rare occurrence in men ; in the present case, the swelling came on spontaneously, without any previous injury of the part. In treating the case, we have acted in conformity to the distinction which we have so often insisted upon between the condition of sub-inflammation and that of non-inflammation. At first there was a sub-inflammatory action, denoted by a slight increase of heat and swelling. On two occasions, 30 leeches were applied around the swelling and then emollient poultices were used ; hemlock pills were taken at the same

time internally. Under this treatment, the pains ceased, and the swelling diminished very considerably. Frictions with the ioduret of lead ointment were then employed, and compression by means of disks of agaric and bandages were kept up : the use of the hemlock internally was continued.

"Attend," said M. Lisfranc, "to this case, and you will be able to judge of the practice of those surgeons who think of nothing but of excision in all cases of white swelling or engorgements, who call amputation of a mamma a trifling matter, and who cannot understand that the remedial means which we employ, even when they do not succeed in preventing the necessity of an operation, have at least the effect of rendering the risk of it much less, by counteracting the unhealthy disposition which unquestionably is apt to lay the foundation for a relapse."

False Anchyloses.

You are aware that a year or two ago the practice of violent extension, by means of a machine, in cases of false ankylosis, was highly spoken of by some of our surgeons ; we however resisted the almost general favour with which this new mode of treatment was received ; and what we predicted of its results has unfortunately proved to be too correct. More than a month before it was utterly abandoned, we had said to its admirers, "you will at least produce a sprain."* You know, if we have been wrong. During that time, we treated, with a slow and gradual extension, two patients, in one of whom ankylosis followed a cured white-swelling, and in the other a wound of the joint. You have seen both patients walking about with their limbs extended. Of the other two patients, at present under our care, one came into the hospital for an abscess in the iliac fossa extending down under Poupart's ligament to the upper part of the thigh : this abscess, after being freely opened, healed up favourably ; thanks to the application of a number of leeches along the *trajet* of the abscess, after it was opened. But two ankyloses remained ; one of the hip and the other of the knee-joint. The second patient, in whom the ankylosis was the result of a cured white-swelling, was submitted to the same mode of treatment. Although the extension, by the machine we used, was slow and very moderate, some degree of inflammation of the joint was induced, which obliged us to discontinue its application for a time, and to have recourse to ordinary means. In few days the inflammatory symptoms were reduced, and the extending machine was again applied. At the present time, we have succeeded in effecting an almost complete *redressement* in both cases.

White Swelling.

We find here the application of the beautiful axiom of Hippocrates : *experientia fallax*. This patient has come to ask our assistance for a white-swelling of the knee-joint, accompanied with much pain and heat. We have had recourse to antiphlogistic remedies, taking care to employ with discretion evacuations of blood, in order that we might not injure the ground on which we had

*M. Lisfranc is here alluding to a mad proposal of a surgeon in Paris to place an ankylosed limb in a certain machine which he had contrived for the purpose, and by which it might be perfectly extended in the course of one or two sittings ! As a matter of course, several cases in which a cure was effected were related ! We often wonder how the poor patients in the French hospitals allow themselves to be experimented upon in all sorts of ways. There is M. Guérin, at the present time, boasting of having divided upwards of 30 muscles and tendons in the same patient, and at one time, for the cure of various deformities ! A gentleman recently returned from Paris, told us the other day that it is by no means an uncommon thing when cupping is ordered, to see one of the *internes* make several cross incisions with a scalpel, in place of using the cupping scarificator.

to carry on the war: subsequently we have used discutients, when the chronic state of the disease was definitely established. For a time our success seemed complete; the pain and swelling had nearly ceased; when, most unexpectedly, and without any appreciable cause, these symptoms, accompanied with effusion into the joint, returned as severely as ever. The pains yielded for a time to the endermic use of the muriate of morphia; but again they became most distressing. We shall be obliged to amputate the limb; for in all probability there is erosion of the cartilages, and possibly caries of the bones. Nothing is more insidious than the prognosis of chronic swellings of the joints. Here is a second case:

A young man fell upon his knee, four years ago; the slight inflammation which followed was readily dissipated by the use of leeches, &c. The symptoms however returned every now and then; and ultimately the joint became permanently engorged. The lymphatic constitution of the patient forbade the use of very active depletory remedies; at first they produced most satisfactory results; and after a relapse of the symptoms, the employment of the mercurial ointment, according to the plan recommended by M. *Serre d' Ures*, again gave hopes of a decided amendment. This however was only temporary and we therefore suspected that there must be, in some part of the system, a principle or element which nullified all our exertions. We suspected the existence of tubercles in the lungs; and, *dans une grande consultation*, this suspicion was proved to be, alas! too correct.

Contraction of the Rectum; Indurations within the gut, &c.

We are convinced that, in a far greater number of such cases than is generally supposed, the local disease is of a venereal origin. We must not allow ourselves to be misled by the assertions of the patients that they never had syphilis; for often they will deny it altogether, or so mis-state the facts as to impose on the surgeon.

On the other hand, some surgeons have confounded the venereal disease with genuine cancer of the rectum; and even the great *Dessault* has recorded cases of cure of what he calls cancer. In the present case, our patient says that the only sexual disease he has had for the last four years has been gonorrhœa; nevertheless I gave him mercury internally, and ordered him to have pieces of lint, gradually made larger and larger, introduced up the gut, and kept there at first for a short time, and subsequently for a longer period. Gum-elastic bougies were afterwards substituted for these; and the result has been that now only a few small isolated indurations remain.

In another, but a much more severe and protracted case of the disease, which has been in the hospital ever since last year, the gut was contracted beyond the reach of the finger; it was also hard, *bosselée*, and adherent to the subjacent tissues, which were then in a state of engorgement; three fistulæ traversed the indurated tissues.

As this patient had been affected with syphilis, we administered mercury at the same time that we used local remedies; and now very slight traces of his disease remain.

I may here mention that in the year 1829, I admitted a case of indurated and ulcerated rectum, which I considered to be cancerous and to require the excision of the lower part of the gut. As the weather was excessively cold at the time, the operation was deferred, and discutient remedies along with compression were resorted to: the cold weather ceased, but there was then no longer any need of an operation! he was completely cured!! The difficulty of distinguishing cancerous from non-cancerous disease is common alike to the rectum and the uterus.

(*Remark*,—This admission of M. *Lisfranc* will account for the number of

operations, often quite unnecessary, which are performed by the French surgeons. A vast number of cases are given over by them to the knife, where a little patience and the use of appropriate constitutional remedies would most assuredly effect a cure. The contrast between French and English surgery in this respect is most favourable to the scientific skill and humanity of our practitioners.—*Rev.*)

Compound Fracture of the Leg.

The upper fragment of the tibia projected for at least three inches through the wound. As the bone was not deprived of its periosteum, we reduced it without sawing any portion of it off: there was a vast effusion of blood, and great inflammatory tension in the part. By employing our usual method we brought every thing, with the greatest simplicity, into a quiet state. (Bleeding from the arm on the first day; local bleeding, as a revulsive, for the following four or five days; emollients, and low diet until suppuration commenced.) As the fragments of the bone remained in apposition without the employment of any apparatus, we did not apply one, and merely secured the foot by compresses fixed on each side to the pillow on which the limb reclined. The pus flowed out by the opening, which was on the inner side of the leg. Much embarrassment would have been experienced, if we had not dispensed with the use of an apparatus.

(*Remark.*—We never observe any allusion, in the French writings on surgery, to the simple and admirable plan of treating compound fractures and dislocations by merely laying lint well wetted with the blood of the wound over the seat of the injury, after the bones have been properly reduced. When the blood dries, the lint forms an excellent protection to the wound, completely excluding it from the air, and favouring cicatrisation. The readers of Sir A. Cooper's classical work on Fractures and Dislocations need not be reminded of the numerous cases which he has treated successfully in this simple manner.—*Rev.*)

Immense Enlargement of the Testicle.

The testicle had increased to at least ten times its normal size. Castration had been recommended to the patient elsewhere. According to our usual practice, we had more faith in a rational treatment. At first antiphlogistic, emollient, and narcotic remedies were used: and then discutients were applied, when all traces of inflammatory action had subsided. Under this mode of treatment the swelling was reduced nearly four-fifths of its volume. An abscess formed, and was opened; it was of a scrofulous character. Within the last week, another abscess has made its appearance, and we have been obliged to discontinue the use of discutients, and again have recourse to antiphlogistic, &c. remedies.

Fracture of both Bones of the Leg in an Infant; False Joint.

Soon after birth this infant had the misfortune to have both bones of the leg broken: the solution of continuity, it seems to us, is too high up to be a mere separation of the epiphyses. However this may be, it has not consolidated; and a false joint has formed. The tendo-Achillis, no longer meeting with any resistance, has drawn the foot upwards and backwards, and keeps it in that position.

Our intention is first to divide the tendon; and then to try some means to effect a consolidation.

Erectile Tumor of the Tongue.

Our patient was sixty years of age, and, for upwards of thirty, had had on the right side of his tongue an erectile tumor, of the size of a pigeon's egg: it extended from the point of re-union of the anterior with the middle third of the

organ to its base. We seized the tongue with a strong hook, and found no little difficulty in preventing its retraction into the mouth: so powerful was the action of its muscles, that we were afraid that the hook would force its way out. The excision was however at length effected, and has succeeded perfectly. For a day or two, there was a tendency to cerebral congestion; but this was relieved by bloodletting.

Ulcerations of the Cervix Uteri.

The frequency of this disease is truly astonishing. I have seen at least several thousand cases, the true nature of which must certainly have been mistaken, if the speculum had not been used. Even with the aid of this instrument, ulcerations of the cervix may be overlooked; for, in many instances, there is no appearance on the outer surface of the cervix: it is indeed usually tumefied and puffy; but such a condition is common both before and after menstruation, when no disease exists. By introducing the finger fairly within the cervix, we find that, if any ulcerations be present, its inner surface, instead of being smooth and polished like the pleura, conveys to the finger the same sensation as the mucous membrane of the stomach does, when it is inflamed, villous and softened.

Another means of diagnosis is by introducing a smooth probe into the cervix and moving it about freely; if any ulcer exists, the surface of the probe, when withdrawn, will probably be spotted with blood.

As to the treatment of ulcerations of the cervix uteri, by far the best method consists in cauterising the diseased surface, after all symptoms of inflammatory action have been relieved, with the acid nitrate of mercury. Some cases are cured by three or four applications of the caustic while others require as many as eighteen or twenty.

Remark.—We need scarcely observe that the practice of using the speculum vaginæ in every woman, who has any symptoms of uterine ailment, is not likely, for very obvious reasons, to be so much in vogue in this country as in France. Fortunately in a vast majority of instances, there is no necessity for it; and as to M. Lisfranc's assertion, that he has treated many *thousand* cases of ulcerations of the cervix uteri, we feel assured that, in the greater number of them, there were no ulcers at all.—(*Rev.*)—*Gazette des Hôpitaux.*

TREATMENT OF FISSURES OF THE ANUS WITH RHATANY INJECTIONS.

M. Bretonneau, the celebrated physician at Tours, seems to have been the first who tried and recommended the use of injections of a strong decoction of Rhatany root in cases of that very troublesome and distressing complaint—fissure of the anus. Constipation is in most cases the cause of the malady, and also the chief impediment to its cure. Now such a state of bowels is very frequently accompanied with a great dilatation of the rectum, especially of that part of it immediately above the sphincter ani. In this dilated portion of the gut the feculent matters are apt to accumulate, and there form an immense hardened mass, the evacuation of which often gives rise to excessive pain, almost as severe as that of child-birth. M. Bretonneau, by attending to these circumstances, came to the conclusion that the enfeebled and dilated state of the bowel might be most effectually cured by the use of topical astringents, applied directly to its surface. For this purpose he used a solution of the extract of rhatany in water, to which some of the tincture of the same was added. Several patients, who had for long suffered both from constipation and from fissure of the anus, were cured of both these complaints by using the Rhatany injection. But it is not only in those cases of fissure of the anus, which are accompanied with a confined state

of the bowels, but also in many other cases, that a cure has been effected with the remedy.

M. Trousseau writes: "within the last few months, I have treated five cases with this remedy; of these four have been cured. M. Marjolin has also succeeded in one case, and M. Berard in two. My plan of using it is to order the patient to take an aperient enema every morning, and half an hour afterwards an injection made of a strong decoction of Rhatany root, which he should endeavour to retain; this injection should be repeated in the evening: when the pains attending the act of defecation become abated, one injection in the course of the twenty-four hours will be sufficient."—*Journal des Connaissances*, &c.

SUBCUTANEOUS SECTION OF FORTY-TWO MUSCLES, TENDONS, OR LIGAMENTS, IN THE SAME PATIENT.

"I have the honor," says M. Jules Guerin, "to communicat   to the Academy the account of an operation, which, by its character of generality and its immediate results, appears to me destined to fix in a definitive manner the value of a principle, which I have endeavoured to explain in my memoir on subcutaneous wounds—viz: that wounds made under the skin, and thus out of the reach of the air, are exempt from all tendency to suppurative inflammation.

On the 25th of this month, August, I made, in the case of a young man twenty-two years of age, the subcutaneous division of forty-two muscles, tendons or ligaments, to remedy a series of deformities of the trunk and extremities, induced by the active retraction of these muscles and ligaments. This series of operations required twenty-eight incisions of the skin. The following muscles, tendons and ligaments were divided: the pectoralis major, the brachial biceps on each side, the two pronatores radii teretes, the two radiales antici, the two flexores digitorum sublimes, and the two palmares parvi; also the tendons of the ulnares antici, those of the palmares magni et parvi, and those of the abductores pollicis. Besides these muscles and tendons in the arm and of the elbow and wrist, the following also in both of the lower extremities were divided—at the knees, the sartorius, the biceps, the semi-membranosus, the semitendinosus, the rectus internus, the fascia lata and external lateral ligaments, and at the feet, the tendo-Achillis, the tibialis anticus, the extensor communis, the extensor proprius pollicis, and the peroneus anticus.

Voici! the immediate results of these operations:—The patient experienced only *mediocre* pain and fatigue; he uttered no complaint during the performance of the operations, which occupied a full hour. Soon afterwards he fell asleep; and the following night and next day he remained quite tranquil. No sign of inflammatory action any where presented itself; and by the third day the twenty-eight wounds were completely healed. Surely such a case as the present must convince every one of the perfect innocuity of the subcutaneous division of muscles and other parts."—*Gazette Medicale*.

POST-MORTEM EXAMINATION AFTER SUCCESSFUL LIGATURE OF THE COMMON ILIAC ARTERY.

M. Salomon, professor of surgery at St. Petersburg, tied the left common iliac artery in a case of aneurysm in the groin: the success of the operation was complete. Ten months afterwards, the patient died from the formation of a large abscess in the iliac muscle of the affected side. The following description is given of the state of the iliac and femoral arteries, observed after an injection had been thrown into the descending aorta.

"The injection had passed into both lower extremities ; the left common iliac artery was found to have been tied at about an inch above its division ; from this point to its junction with the aorta, it was converted into a firm ligamentous cord. A small quantity of the injection had reached the left external iliac by the hypogastric or internal iliac, which communicated freely with the corresponding vessels on the other side. The left femoral artery began to be injected at about 54 millimetres below Poupart's ligament. The right common iliac, external iliac, and femoral arteries, with their branches, were much dilated ; likewise the left lower lumbar arteries, which anastomosed with the circumflex artery of the ileum. The middle artery of the sacrum also, but principally the branches of the ischiatic and common pudic, and also the vesical and hæmorrhoidal vessels on the left side, were found much larger than usual ; they formed in the pelvis a considerable vascular network, which communicated freely with the vessels of the opposite side. The anastomoses between the branches of the ischiatic and of the deep femoral artery were most conspicuous on the back of the limb. The left inferior epigastric—which, as well as the circumflex artery of the ileum, was obliterated at its commencement—was contracted, and received its blood in part from the superior epigastric, and in part from its fellow on the right side. The left obturator artery was considerably dilated, and communicated in the thigh with branches from the femoral. The deep femoral and all its branches were filled with injection, although the vessel was ligamentous at its origin.—*Gazette Medicale, Aout.*

ANEURISM OF THE CAROTID : LIGATURE BEYOND THE TUMOUR : CURE.

A woman, 63 years of age, had a pulsating tumour on the left side of the neck, and immediately opposite to the sterno-clavicular articulation, which very seriously distressed her breathing. This aneurismal tumour was considered to be of about three year's standing. As it was situated so low down the neck that it was impossible to put a ligature around the artery between the seat of the aneurism and the heart, M. Colson determined to try the operation of Brasdor, that of tying the vessel beyond the tumour. The success of the operation was eventually complete ; the pulsations of the swelling became gradually less and less, and the dyspnœa was effectually relieved. It is now a twelvemonth since the operation was performed ; the tumour is reduced to the size of a small nut, and still communicates very feeble pulsatory movements.

When this case was communicated to the Royal Academy, M. Larrey, who had been appointed to report upon it, expressed his utter disapproval of the Brasdorian operation, in spite of the success which attended the present and a few other cases. He had in his own practice obtained such satisfactory results from the application of ice and of moxas in the treatment of aneurismal tumors, that, in his opinion, no other means except these should be used, when the ordinary operation cannot be performed. He alluded to a case of aneurismal varix between the external iliac artery and vein, which he cured in this way, although the tumor was so large that it reached, and even passed, the level of the antero-superior spine of the os ilii.

M. Blandin was unwilling to go so far, as M. Larrey, in condemning the Brasdorian operation in all cases without exception. No one indeed can deny that the application of ice and of moxas over aneurismal tumours has proved quite ineffectual in a certain number of cases. Then what is the surgeon to do ? Is he to refuse to try the effect of an operation, which is certainly not a good one, but which has succeeded a few times ?

M. Velpeau agreed with the observations of M. Blandin. The Brasdorian operation has now been performed about 20 times, and five or six of the cases

have terminated favourably. As far as he knew, it had been performed in France only twice—by M. Dupuytren and M. Langier—and in both cases unsuccessfully, before the present case of M. Colson. The method of M. Larrey ought certainly to be fairly tried before we resort to so uncertain an operation as that of tying a large artery beyond an aneurismal sac. Perhaps no artery is so favourably situated for the Brasdorian operation as the common carotid, seeing that no branches are given off between the sac and the point at which the ligature is placed. In two or three cases, this operation has succeeded even in cases of aneurism of the arteria innominata.

VARICOSE ANEURISM BETWEEN THE INTERNAL CAROTID ARTERY AND THE INTERNAL JUGULAR VEIN.

The following description of the appearances found on dissection, in a case of gun-shot wound of the mouth, which proved fatal about a twelvemonth after the accident, by inducing cerebral disease, will be read with interest :

..... "After carefully dissecting the superficial muscles of the neck, and having removed the *sterno-cleido-mastoideus*, the *hyo-scapularis*, and the three small muscles which are attached to the styloid process, I sawed the inferior maxilla across and disarticulated it from the socket. Having done this, it was easy to follow the carotid artery and the internal jugular vein along the whole course. At the point situated immediately behind the angle of the removed jaw, we perceived the ball lodged within the jugular vein. The parietes of the vessel from this point upwards to the base of the skull were much thickened and had acquired nearly the consistence and firmness of the coats of an artery ; the lower part of the vein retained its natural thinness and shining aspect. On tracing the internal carotid artery it was found to form a pouch of the size of a pigeon's egg just before entering the canal in the temporal bone. This pouch contained several coagula, which were partly sanguineous and partly fibrinous. At its base, it was found to communicate with the internal jugular vein ; and from this point the artery retained its ordinary form and dimensions. In passing a probe from the aneurismal pouch to one side it readily entered the cavity of the internal carotid ; and when it was directed to the left side, it entered the jugular vein just where the ball was lodged, and where it had become so adherent that it could not be pushed either up or down."

Those who may wish to know the particulars of this very curious case will find it recorded in one of the July Numbers of the *Gazette Medicale*.

ABLATION OF THE CLAVICLE.

In the number of the *Gazette Medicale* for last July 18th, we find short reports of two cases, where the entire clavicle was removed in consequence of necrosis. In both cases, the bone had become quite moveable : and in one of them it would seem that no incision were necessary, as the bone was removed with a pair of forceps through an ulcerated wound, that had long existed. In the other case, the necrosed clavicle was cautiously separated from its attachments to the sternum and the first rib, and then from its attachments to the acromion of the scapula : these steps were effected without much difficulty, and the entire clavicle was then easily brought away. Both of these cases occurred in scrofulous children ; and the two young patients not only recovered their health perfectly, but also retained an almost complete use of their arms.

NOTICE OF THE MEDICINISCHE JAHRBUCHER.

We have received the 29th volume of this Austrian journal—one of the very best that is published in Germany—from its chief editor, Professor Rosas of the University of Vienna. It consists of four numbers, one appearing every three months. The contents are arranged under several heads.—1. Original essays and communications. 2. Medical statistics. 3. Analytic notices of the most eminent works; and 4. Miscellaneous extracts from the leading medical journals of Germany and of other countries. As usual with all German writings, this Journal is characterised rather by curious reports and elaborate erudition, than by strictly practical information. We miss the clinical observations, the useful hints and precepts, and the well-selected extracts from new books, which to an English reader constitute the value of a medical journal. The following excerpts will explain our meaning, and are a fair specimen of the contents of the “*Medicinische Jahrbucher*.”

CASE OF MENSTRUAL FLUX IN A MAN.

A tall but rather delicately formed young man 21 years of age, and whose health was on the whole perfectly good, observed for the first time in February 1838, that there was a spontaneous discharge of blood from the urethra: this discharge continued for four days. When it ceased, he found himself lighter and altogether better than he had been for some time before. From this period, the discharge, always preceded for two or three days by headache, vertigo, &c. returned every fourth week, remaining each time two or three days. His health was always better immediately after its cessation. Various means had been tried to stop this anomalous evacuation, but without avail. (It is not stated how long the man had been subject to it before Dr. Julius, the reporter of the case, saw him.)—*Rev.*

EXAMINATION OF THE AUDITORY ORGANS IN A DEAF AND DUMB PERSON.

A youth who had been deaf and dumb from his infancy, was admitted into the institution for such invalids at Vienna, when he was eight years of age, and he died there in his twelfth year. The dissection of the encephalon, and more especially of every part connected with the auditory function, was performed with great care, and the report is given at full length. The following is a summary of the more remarkable abnormal appearances.

“This examination of the organs of hearing shews that the abnormal condition of these parts depends upon a congenital defective formation of the bony parts, some of these being imperfectly developed, while others are developed in excess. To the *first class* may be referred the absence of the *promontory* and of the *foramen rotundum*, the complete fusion, so to speak, of the *stapes* with this foramen and with the Fallopian canal, the want of the pyramidal-formed elevation, by which is caused in part the deficiency of the *stapedius* muscle, and the imperfect formation of the cochlea. To the *second class*, the greater accumulation of osseous matter in every part of the cranial bones, and the superfluous formation of a roundish little bone between the bony process of the *incus* and the head of the *stapes*. The circumstance too of the want of the usual proportion between the middle and the posterior hollows of the cranium, in consequence of which the whole skull has somewhat of an oblique direction—this has been observed in two other cases of deaf and dumb persons—and, on the contrary, the perfectly normal formation of the nerves, which are expended on the tympanum and on the labyrinth, deserves to be noticed.

From these facts it seems that, in the present case, at least, the deafness was owing not to any defective state of the nervous apparatus of the ear, but only to some irregularities in the formation of the bony parts of the tympanum and of the labyrinth."

ANÆSTHESIA OF THE TRIGEMINUS NERVE.

A woman, 42 years of age, had the misfortune to fall and strike the back of the head on the edge of a stair. A year afterwards the catamenia ceased altogether, and from this time she began to suffer from frequent attacks of most violent sneezing. No unusual appearance could be detected in the nostrils; and it was therefore suspected that there was an irritation of the fifth pair of nerves in the cranial cavity. Along the course of the first and second divisions of the trigeminus there was no loss of sensibility; but the third division was decidedly *anæsthetic*.

The left half of the under lip, both on its inner and its outer surface, and the left half of the chin, were quite insensible, even when pricked deeply with a needle: the inner portion of the muscle of the corresponding ear and of the meatus auditorius were equally dead to all impressions. The teguments of the left temple near the hair, and also the entire left half of the tongue, were perfectly insensible alike to injury and to changes of temperature: this side of the tongue too had lost its sense of taste. But when the skin of the temple near the forehead was pricked, the patient immediately complained—in consequence of this part being supplied with twigs from the *frontalis* nerve. On the right side all the corresponding parts were quite sensible; and even in the left eyelids the other sensory nerves retained their integrity, both as respected sensation and power of motion. The organic and nutritive functions of all the parts, which were insensible, were not at all impaired. The patient eventually died of dropsy.

Dissection.—At various points on the surface of the brain there was an exudation of lymph; and on the lower surface of the posterior lobe the cerebral substance was found in a state of *ramollissement*, to the extent of an inch or so. The third, or submaxillary branch of the trigeminus pair on this (the left) side, where it entered the foramen ovale, appeared to be enveloped with a red vascular network, composed partly of fibres and partly of transparent vesicles. On close inspection, it seemed to be either an exudation on, or an hypertrophied state of, the neurilema: the substance of the nerve itself was swollen, of a yellowish colour, and somewhat harder than it usually is. But it was only that portion of the third branch, which arises from the Gasserian ganglion, that was so altered. The motory portion on the inner side was unchanged, and coalesced with the larger division beyond the diseased point. The various twigs to the pterygoid and buccinator muscles, to the temple, the tongue, and the lower jaw, were throughout in a normal condition, as well as the third branch of the right trigeminus, and also the glosso-pharyngeal on both sides.

CURIOUS CASE OF ENCYSTED TUMOR ON THE EDGE OF THE LIVER.

A delicate woman, of about 30 years of age, had observed, for some time before her marriage, a soft uniform swelling in the precordial region, which had gradually appeared without any appreciable cause, was always most prominent when the stomach was distended with food, and gave rise to a certain feeling of oppression and uneasiness at that time. During her first pregnancy she found that, immediately after the morning attacks of vomiting, the swelling was always much smaller than it was just before; but when these ceased, that it became

larger and larger until it acquired the size of a goose's egg. After delivery the swelling subsided altogether; but, during her second pregnancy, it re-appeared, and caused greater uneasiness than on the former occasion.

The operation of an emetic always caused a diminution in its size, but when this was over, the swelling gradually returned. The woman became phthisical and died.

Dissection.—The lungs were loaded with tubercles in various stages of development. On opening the abdomen, the upper part of the left lobe of the liver was found to be adherent to the cardia by a tumor of the size of a man's fist. This tumor proved to be of an hydatidic character; and its parietes consisted of three distinct membranes which inclosed a quantity of yellowish serum: it was an acephalocyst of Laennec. At one point of its circumference there was a fistulous opening, which communicated with the cavity of the stomach, and by which therefore its contents were evacuated during the efforts of vomiting.

NUX VOMICA IN THE VOMITING OF PREGNANT WOMEN.

Dr. Kroyer, of Presburg, assures us that minute doses of the nux vomica, given in some aromatic or in cherry-laurel water, are a *specific* remedy against the troublesome vomiting, to which many women are subject during the early months of pregnancy. In order to insure success, the bowels must be kept in a gently open condition, but neither purged nor constipated. The author says, that the effects of this remedy are certain, provided the vomiting is the result of pregnancy alone, and is not dependent on any morbid state either of the stomach or of any other organ. The dose recommended is from two to four drops of the tincture—the strength of this is not stated—to be gradually increased to ten, twelve, or eighteen drops every morning in bed, and again in the evening. In many cases it proves quite successful within a week or even a shorter time; in other cases its use must be continued longer.

CASE OF SPONTANEOUS HYDROPHOBIA.

A middle-aged man, while under treatment for venereal complaints, was unexpectedly seized with a complete inability to swallow any thing either solid or fluid, and with such well marked hydrophobia that the mere sight of fluids brought on strong convulsions. His countenance betrayed the most intense anxiety, and every now and then he gasped at the air whenever the gentlest breath of it was blown upon him.

Neither he nor any of his acquaintances remembered that he had ever been bitten by a dog or any other animal. As he could not swallow powders of calomel and belladonna, the latter substance was applied to a blistered surface on the epigastric region, and mercurial ointment mixed with extract of belladonna was rubbed in along the spine. The poor fellow made the most violent efforts to swallow food and medicine; but all without avail: he was immediately seized with the most excruciating convulsions, during one of which he sprang out of bed like a maniac, and with foaming mouth tried to bite the attendants; while standing, he fell down and expired. The hydrophobic symptoms had lasted for about 60 hours. Permission could not be obtained to examine the body.

The preceding case is the more remarkable, as the spontaneous hydrophobia or dread of fluids was not merely a symptom, but the actual and essential disease, and terminated with genuine rabies. It is therefore beyond all doubt the *rabies canina* may be developed as a primary disease in the human being. The circumstance of priapism having preceded the hydrophobia appears to

confirm the causal connexion, although this is disputed by many, between the disease and excitation of the generative organs. (This case is taken from Caspar's *Wochenschrift*, No. 24, for 1839.)

ON THE EXTERNAL AND INTERNAL USE OF VERATRINE.

The principal action of this very potent substance seems to be on the spinal-marrow ; for, soon after it has been swallowed, the person begins to experience a dull burning pain in the sacral region, various uneasy feelings through the abdomen, increased watery and silmy evacuations from the bowels, but rarely any diuresis. If its use be still continued, it causes dryness and a sense of burning in the mouth, intense thirst, nausea, vomiting, bloody stools, coldness of the limbs, trembling, syncope, delirium, and paralysis ; the urine is usually scanty, thick, and of a deep red colour. The surest antidote to these symptoms is strong coffee with lemon juice.

The veratrine, endermically used by sprinkling half a grain on the epigastric region deprived of its epidermis, excites nausea, sense of tightness in the chest, electric-like dartings through the chest and abdomen, and painful twitchings in the limbs. In some cases of palsy it has been used with decided advantage ; but, as it is certainly inferior to strychnine, we can generally dispense with it. The best mode however of using the veratrine is friction with an ointment containing from ten to twenty grains, rubbed up with an ounce of lard : its peculiar electric-like local effects are most easily obtained in this way. It has been used with excellent effects in all forms of purely-neuralgic suffering, especially in *hemicrania*, *ischias nervosa*, *neuralgia facialis*, *asthma*, *convulsions*, and in some most excruciating neuralgiæ arising from calculus in the kidneys :—in many cases, combined with the extract of belladonna, it is still more efficient.

Another effect of veratrine is the excitation and regulation of anomalous actions (*thätigkeitsausserungen*) of the nerves proceeding from the spinal marrow. If an ointment—composed of from two to four grains and an ounce of lard—be rubbed along the spine, twice a day for five, six, or eight weeks, much relief will often be experienced in weakness of the lower limbs, (especially if this has been the effect of seminal irregularities,) in rheumatic pains, in debility of the bladder and sphincters, in menstrual cramps,* in convulsive affections of the urinary organs, in suppressed hæmorrhoids, in pertussis, and probably also in diabetes mellitus. Dr. Reiche, the writer of these remarks, has never observed that the veratrine has any diuretic effects ; although he has certainly found that many of the distressing symptoms of hydrothorax and hydrops-pericardii are much relieved by its external use. That it exerts emmenagogue powers cannot be disputed. It seems also to stimulate the absorbent vessels of the part, and it has therefore been used with advantage in the dispersion of some subcutaneous tumors.

In a subsequent article, taken from the *Medicinishe Zeitung*, there is reported a case of severe intermittent neuralgia of the frontal nerves, which, after resisting the internal use of quinine and other remedies, yielded at once to the application of veratrine ointment—two grains to the drachm of lard—to the forehead previously denuded by a blister of its epidermis. The effect was most rapid and well-marked.

* Some English practitioners have of late recommended frictions with veratrine ointment over the sacrum as a sovereign remedy in certain intractable cases of dysmenorrhœa. We have no experience of it ourselves ; but we are in the daily habit of using the belladonna plaster in such cases with admirable effect.—(*Rev.*)

CASE OF OBLITERATION OF THE AORTA.

A soldier, who had served in all the German campaigns from 1790 to 1815, had for five years before his death suffered a great deal from difficulty of breathing and cramps in the stomach;—these latter were often excessively severe, and brought on such violent vomitings, that all food was rejected. To these symptoms were gradually added most distressing palpitations of the heart and anasarcoous swellings of the lower limbs. Under the use of the *magisterium bismuthi* and *digitalis*, the patient experienced great relief: the pulse however continued to give out a peculiar *whirring* sensation, which lasted to the period of the patient's death; this occurred very suddenly, while the patient was sitting at table.

Dissection.—The brain was very soft; its vessels empty of blood; and the basilar artery was ossified: four ounces of serum were found at the base of the cranium.

The heart was greatly enlarged and hypertrophied: the valves however, in both cavities, were healthy. The aorta from its commencement to the giving off of the *arteria innominata* was much dilated, and the latter vessel was nearly twice as large as usual. The left subclavian artery was in a similar condition, but the left carotid was unaffected. The two coronary arteries of the heart were completely ossified to the extent of three inches or upwards.

From the point of origin of the *arteria innominata*, the aorta was considerably narrowed and became more and more so: where the *ductus Botalli* joins the arch, it was not above half an inch wide; and just beyond this point, its canal was completely obliterated for half an inch in extent, by the cohesion of its parietes. The thoracic and the abdominal aorta was scarcely so large as it is usually in a child of 10 years of age.

The intercostal arteries, which were the first branches that were given off below the point of obliteration, were enlarged to the fourth of an inch in diameter, and insulated freely with branches of the internal mammaries. It was chiefly through these arteries that the interrupted circulation of the blood had been again restored. The pulmonary arteries seemed to be somewhat dilated, although the lungs themselves were in a perfectly healthy condition.*

The case, which we have now briefly reported, has considerable resemblance to that recorded by Dr. Graham in the 5th volume of the *Medico-Chirurgical Transactions*, and which occurred in a youth 14 years of age, who died of the effects of pneumonia. On dissection, the heart was found to be greatly enlarged and the walls of the left ventricle excessively thickened; all the valves however were healthy. At its commencement, the aorta was considerably dilated; but below the giving off of the left carotid and the subclavian arteries it was much contracted: the contraction extended as far as the point where the *ductus Botalli* joined the aorta, where it was found to be completely obstructed for two or three lines in extent. The parietes of the aorta were neither thickened, nor in any degree altered. The circulation of the blood had been maintained by the enlarged anastomoses between the upper intercostal and the scapular and internal mammary arteries on the one hand, and the lower intercostal and the epigastric on the other. Beyond the obliterated point, the aorta resumed its normal size and diameter.

Other cases of obstruction of the aorta are on record. Stenzel, in his essay *De Steatomatibus in principis Aortæ Repertis*, mentions the case of a man,

* There is a very good engraving attached to the report of the case, so that the reader may judge exactly of the situation of the obstruction and the relative changes in the size of the different arterial branches.

who, although subject to dyspnœa, asthma, and palpitations of the heart, was robust and vigorous. Yet, on dissecting the body, two large tumors were found in the arch of the aorta, the tube of which was completely obstructed in consequence. Another case is related in the second volume of Dessault's *Journal of Surgery*: in it however the obstruction, which was situated immediately beyond the arch, was not complete, although so great that a writing-quill could not be passed through it. Sir A. Cooper too has recorded a somewhat similar example, which occurred in a man 57 years of age, who had for many years been subject to a cough, dyspnœa, &c. A third analogous case will be found in Professor Otto's *Neue Seltene Beobachtungen*.

A POEM ON SYPHILIS.

One of the novelties of French literature, during the last year, is a poem in two cantos on the *popular* subject of syphilis, by M. Barthelemy of Paris! "In the present day, when all other themes," says he, "are exhausted, none seemed altogether more virginal than the one which I have selected." The work is addressed both to savans and the people of the world. How far the literary public will approve of our author's choice remains to be seen—some indeed will be inclined to cry out on the mere inspection of the title-page, and say with Boileau, that "le lecteur Français veut être respecté." It is however surprising how M. Barthelemy has discoursed so learnedly upon the mysteries of his subject, without offending either decency or good taste: at least so says one of his compatriot reviewers—"the most strict father of a family may put this work into the hands of his son without any alarms of conscience; nay, he may even encourage him to meditate on the pictures which it presents, pictures which are at once hideous and salutary."

The poem commences with a history of the disease: the author does not pretend to decide whether it was known to the ancients, or whether it came from the new world,

———"Vengeont sur nous sa liberté mourante,
L'Amerique ait conquis l'Europe conquerante."

Whatever be its origin, it is but too true that, now, not a corner of the world is exempt from the scourge:

"Invisible et present, comme l'air qu'on respire,
Ce grand empoisonneur tient tout sous son Empire.
Nulle digne qui puisse arreter ce torrent;
Il saisit, à la fois, le docte et l'ignorant,
Le riche en son hotel, le pauvre en sa cabane,
L'empie et l'homme saint qu'abrite la soutane,
Le vieillard, l'enfant meme, atteint souvent d'un mal
Dont il n'est pas lavé par le flot baptismal;
Et peut-etre aujourd'hui, parmi l'espece humaine,
Il n'est pas un seul homme, et dans l'homme une veine
Où, quoique bien souvent encore non revelé,
Le virus destructeur ne soit inoculé." &c.

The degeneration of the present race of mankind in their thewes and sinews from their forefathers, whose armour we pigmies of the nineteenth century can scarcely lift, not to mention the numberless abortive-looking mortals we daily see, with narrow chests, pale faces, hollow eyes and deformed limbs, "qu'attend orthopédie," are all ascribed by our poetical author,

"Au germe de mort infiltré dans leur sang."

He seems to have a high opinion of the antidotal power of certain remedies ; for in the second canto, which is entitled *Le Remede*, the first being entitled *Le Mal*, he tells his readers that the scientific physician can confidently predict the date of cure to his patient :

Et ce jour le malade, affranchi de souillure,
Se leve et prend son lit, comme dans l'écriture ;
Miracles du savoir, si soudains et si beaux,
Qu'il semble dire aux morts : sortez de vos tombeaux !

He is a decided anti-mercurialist, and trusts exclusively to vegetable remedies.

Appended to the work are numerous scientific and well written notes from the pen of M. Girardeau de St. Gervais.—*L'Encyclographie*.

CASE OF SPONTANEOUS COMBUSTION.

Dr. Lievin, one of the surgeons of the French Army at Algiers, was summoned to visit a Moor that had become suddenly ill. He found his patient, a man between 40 and 50 years of age, in a state of profound coma : he was large, very fat, and bore all the traces of an habitual drunkard. He had been missed by his friends for several days, and was at length found lying in the streets in a state of intoxication. He was immediately bled from the arm and leeches very copiously, &c. Two days afterwards he was again bled ; and on the fifth day he had so far recovered as to be able to go to the Mosque to return prayers for his convalescence : he returned drunk. Next day he again went out and did not return for three days. This life of inebriety had continued for a month, when Dr. Lievin was again called to his house. A horrible spectacle awaited him there : on the ground lay a corpse three-fourths consumed, black, carbonised and exhaling a most offensive empyreumatic smell. The limbs and a great portion of the trunk were consumed. The account which the attendants gave was, that he had been brought home, on the preceding night, drunk as usual, and was put to bed. A smell of burning being perceived in the house some time afterwards, they entered his room and found him suffering from excruciating pains ; he said that he was burning all over ; he drank freely of water, but found no relief. A blueish coloured flame was observed playing around his body, which exhibited in different parts some frightful wounds. The attendants left the room in horror, believing that he was a victim to some demon, in consequence of his having disobeyed the commandments of the holy Prophet.

The combustion in this case took place by the simple force of the organisation ; no body in a state of ignition had been near the patient.—*Journal des Connaissances Medicales. Mai.*

OF THE PERFORATING ULCER OF THE STOMACH.

The following observations are from the pen of Professor Rokitanski of Vienna, where the disease must be more than usually frequent, as our author states that he has seen upwards of 100 cases.

The perforation in the stomach is in general circular and of three lines or more in diameter ; the edges of the aperture are sharp and well defined, giving the appearance as if a round piece had been cut out with an instrument. As the loss of substance is always somewhat greater on the inner than on the outer

surface, the edges on the former are necessarily attenuated more and more, as they approach the aperture.

The ulcer is almost always found in the pyloric half of the stomach; in one case only the author observed it in the fundus or small cul-de-sac. Most frequently the ulcer is situated about the middle of the pyloric half, generally on its posterior wall, and always near, and often on the small curvature. The cicatrices of former ulcers are usually observed on the inner surface of the stomach; rarely on the outer. The situation of the ulcer on this part of the organ is more remarkable, as, according to the researches of M. Rokitsanski, *Gastromalacia*, or softening of the stomach, is always observed in its cardiac half.*

Ulcers are more rare very near to the pylorus: and the author has never seen them in any part of the intestines, except in the upper part of the duodenum: this however is of very unfrequent occurrence.

Of 79 cases, in 20 the ulcer was situated on the posterior wall of the stomach, in 15 on the small curvature, in 5 on the anterior wall, in 16 at a short distance from the pylorus, in 6 in the duodenum, and in 16 in different parts, as in the anterior and posterior walls, at the same time.†

The size of these ulcers varies from that of a *sou* to that of a five-franc piece, and sometimes it is even larger. Their shape is usually circular; when large, they sometimes take an elliptical form; more rarely still they are irregular. The author is of opinion that the ulcer commences with a circumscribed softening, as an eschar, of the affected part; but the exciting cause of this local mortification he cannot explain. Let it not be supposed that the disease is inevitably progressive, until it proves fatal. The destruction of the mucuous membrane, with which the disease begins, may be repaired by cicatrization: the corrosion stops in the submucous cellular tissue, which then becomes of a fibrous character, and unites firmly with the edges of the mucous membrane on the one hand, and with the muscular tissue on the other.

That the cicatrix-looking marks, which we not unfrequently observe on the inner surface of the stomach, are in truth the results of the healing of previously-existing ulcers may be fairly inferred, not only from their shape and their situation being the same, but also from the circumstance, that they are occasionally met with co-existent and side by side—not to mention the fact that those persons, in whom on dissection the cicatrices have been discovered, have always suffered, at some former period of life, from those very symptoms which are known to accompany the existence of an ulcer in the stomach.

When the ulcer does not cicatrize, it extends deeper and deeper, until at length it reaches the peritoneal coat of the stomach, and perhaps eats through this obstruction. If no adhesion has taken place at this point between the stomach and one of the adjacent viscera, the contents of the former escape into the cavity of the abdomen, and inevitably induce a fatal peritonitis. Occasionally indeed the ulceration extends to the substance of the adherent viscus: in this way the author has seen the diaphragm in one case perforated, and in another the base of the lung corroded. A hæmorrhage may thus be unexpectedly induced, which may suddenly occasion the death of the patient.

* An account of this disease will be found in a preceding article, taken from one of the German Journals, in a former part of the present Number.

† In 12 cases there were two, in 4 there were three, and in one there were as many as five ulcers at the same time. When there is a plurality of ulcers, they are usually situated, one above the other, on the posterior wall or at the small curvature of the stomach: it is rare to find one at the anterior, and another at the posterior wall—this was observed four times only out of seventeen cases. In one case there were two ulcers in the duodenum, the one situated immediately opposite to the other; and in another case there was one ulcer in the duodenum and another in the stomach close to the pylorus.

With respect to the *symptoms* of ulcer of the stomach, Dr. Rokitski describes three stages of the disease. The *first* is characterised by some form or another of that most Protean malady, dyspepsia, with which the patient may have been afflicted for several years. Increase of gastric pain and distress after food, accompanied with more or less frequent vomiting, is the leading symptom of the *second* stage; while the *third* is characterised by the sudden accession of peritonitic symptoms, induced by the escape of the contents of the stomach into the abdominal cavity. Such an attack may excite the suspicion of poisoning having taken place. Cruveilhier has said that the perforation may suddenly take place during a bodily exertion; this may be so. When the opening is plugged up by some adjacent viscus, we cannot, as a matter of course, determine the moment it occurs; but we may suspect it by the invasion of distressing cardialgia, lasting perhaps unabated for several days and accompanied with swooning, vomiting of blood, &c. The hæmorrhage, as we have already stated, may prove fatal at the time; in other cases it returns on several occasions. The disease may therefore be said to terminate in one of two ways—either by peritonitis or by hæmorrhage. It rarely becomes chronic, and exhausts the patient by mere debility; occasionally indeed before death dysentery supervenes.

In spite however of the very unfavourable prognosis in every case of ulcer of the stomach, it is most certain that a cure not unfrequently takes place—attested as we have already stated, by the discovery of circular cicatrices on the internal surface of the stomach in persons who had previously suffered from all the symptoms of the first and second stages of the disease. The disposition to relapses in such cases is very remarkable; this is proved by the presence of one or of several of these cicatrices situated near to, or at, the side of the ulcer. Even when the cicatrization is complete, the patient usually continues for a greater or shorter length of time subject to dyspeptic sufferings.

As to the *etiology* of the disease, the author says that he has seen it accompanied with irregular hæmorrhoids, with dysmenorrhœa, gout, &c.;—but he has never observed any distinct *rapport* between these maladies. He is, however of opinion, that all those diseases which induce repeated irritation of the gastric mucous membrane, and at length occasion an hypertrophe and an increase of the secretion from this membrane, not unfrequently terminate by the formation of an ulcer. Intermittent fevers, when they are accompanied with stomach complaints, have a great influence on the production of this disease. With respect to the sex and age at which the disease is most common, we may state that out of 79 cases, 46 occurred in females, and 33 in males.

Amongst the *former*, 18 were above 50 years of age, and 15 were under 30; of these last there were three whose respective ages were 16, 17, and 19. Among the *latter*, 12 were above 50 years, and six were under 30.

The phenomena, which we have described as usually present in the perforating ulcer of the stomach, are observed in cancerous disease of this organ also; and hence it is not unfrequent that physicians confound the two maladies together. What adds to the difficulty of the diagnosis is, that they are sometimes associated together in one case. This is the more distressing, as it scarcely leaves a hope for expectation of good from any system of treatment; whereas, in the uncomplicated form of the perforating ulcer, a cure is not unfrequently effected in its early stage by appropriate and perseveringly used remedies.

Our author mentions, as among the best discriminating symptoms of these two kinds of gastric disease, the absence in the latter of those phenomena which indicate a thickening of the pyloric parietes and a contraction of its canal—such as vomiting two or three hours after taking food, the dilatation of the stomach and its cul-de-sac, and, lastly, the presence of a fixed resisting tumor in the region of the pylorus. The vomiting of chocolate-looking matters is more common in the cancerous than in the perforating ulcer of the stomach; in the former disease too, we not unfrequently perceive among the rejected contents

of the stomach portions of the cancerous tumor; whereas, in the latter, the vomited matters are mixed with blackish-brown flocculi; hæmorrhage, also, and occasional intermissions of suffering are certainly more frequently observed in this than in the other case; and, moreover, the perforating ulcer is often met with in young persons, whereas cancer is a disease usually of more advanced life.

Lastly, the absence of all the marks of a cancerous cachexia are to be taken into account in forming our diagnosis.

As to the treatment of the perforating ulcer of the stomach, Dr. Rokitsanski very properly says, that more may be done by an appropriate diet than by any particular course of medicine. Milk is, on the whole, the best food; a small quantity should be taken every three or four hours. Magnesia, prepared chalk, lime water, &c. are often useful at times, and may be added to the milk.

When this does not suit the stomach, we should try weak broths, mucilaginous decoctions, panadas, and such like articles. The occasional application of leeches, and of some epispastic, such as the strong antimonial ointment, on the epigastric region is useful: also tisanes of chamomile, mint; and, if hæmorrhage should ensue, acids, alum, acetate of lead, kino, rhatany, &c. We should never have much confidence in any amendment, which occurs suddenly: in all probability it will be of but short duration.—*Oesterr. Med. Jahrbucher*, 1839.

REDUCTION OF AN ALLEDGED DISLOCATION OF THE SECOND CERVICAL VERTEBRA.

M. Guerin, the celebrated orthopædic surgeon of Paris, has recently published the following case in the *Gazette Medicale*.

A young girl fell on the pavement and struck her chin severely; next day she felt considerable pain in the neck, and the head was observed to be inclined to the left side, while the face was turned to the right. This deformity became gradually greater for several successive days.

Various attempts were made at the time to rectify the displacement, but without avail. Five months afterwards, she was examined by MM. Sanson, Marjolin, and Bouvier, the first of whom was opinion, that there might be an incomplete luxation of the superior cervical vertebræ, while the two latter surgeons declared most distinctly that the second cervical vertebra was luxated, and that all attempts at reduction must be abandoned.

Five weeks subsequently M. Guerin saw the patient, and gave it as his opinion that a gradual reduction of the luxation might be tried without danger, and with some prospect of success.

The following was the state of the case at this period: the head was inclined to the left side, and rotated to the right; the spinal column was inclined in a direction contrary to that of the head; there was a projection of the transverse process of the axis at the right side of the neck, above and behind, with a well-marked depression at the opposite side.

According to M. Guerin's views of the case, the dislocation of the second cervical vertebra had probably followed elongation of the ligaments and laceration of the articular surfaces, being ultimately affected by spasmodic contraction of the muscles of the neck. It seemed therefore rational, he thought, to conclude that the vertebra might be restored to its natural position by placing the head and vertebral column in such conditions as would allow the opposite muscles to act with effect, and gradually overcome the forces which had produced and still kept up the displacement. To diminish the spasmodic contraction of the

muscles, frictions with tartar-emetic ointment, and extension along with percussion and kneading of the muscles, were assiduously employed.

After a few days, the inclination of the head was diminished by three-fourths, although the deviation of the transverse process remained the same. To rectify the dislocation of the vertebra was now to be attempted, and the following was the plan which M. Guerin adopted:—

The shoulders being immovably fixed in the horizontal position, extension was employed with both hands to the middle and most prominent part of the neck; the parts being drawn horizontally, and from right to left, while an assistant endeavoured to rotate the head from right to left at the same time. The effect of these exertions was visibly to diminish the projection of the transverse process of the axis.

The same attempts were therefore repeated thrice a day; and during the intervals, the patient was placed on the mechanical bed which M. Guerin employs in the treatment of wry neck. At the expiration of eight days, the axis could be restored completely to its normal position: but it did not retain it; for, as soon as the muscles were allowed to act, they drew the transverse process backwards, but in a less marked degree than before.

This circumstance, which depended on fracture of the left articular process, and on considerable elongation of the ligaments and articular capsule, gave an excellent idea of the mechanism, by which the dislocation had been produced in the first instance. To remedy the tendency to recurrence of the dislocation, the bandage, used by M. Guerin in cases of wry neck, was applied; and in three months the patient was pronounced to be perfectly cured.

(*Remark*).—We are by no means satisfied that there was so serious an accident as luxation, even incomplete, of the second cervical vertebra in this case. We are indebted for the report to a number of the recently started “Provincial Medical and Surgical Journal,” edited by Drs. Green and Streeter, to which we wish all possible success.—(*Rev.*)

NEW METHOD FOR THE RADICAL CURE OF HERNIÆ.

M. Velpeau, the ever active surgeon of La Charité Hospital, alludes to his new proposal in the following terms:—

..... Among the methods employed in former times for the cure of herniæ, there is one, that of scarifications, which has appeared to me, when somewhat modified, capable of effecting the end with safety and success. The old plan consisted in opening the sac and scarifying it in several places. Modern surgeons have rejected it as both dangerous and useless. Dangerous I admit it to be; but I cannot go so far as to say that it is useless. It is well known that if the peritoneum is scarified, there is induced a secretion of plastic lymph which will determine the adherence of the parietes of the canal. Since M. Guerin has shewn that subcutaneous incisions may be made in a great variety of structures without the danger of inducing any suppurative action or any serious inflammation, provided the external air be not admitted into the *trajet* of the wound, it occurred to me that the principle might be extended to the radical cure of reducible herniæ. In one case you have seen me put my proposed plan in practice. After separating and keeping to one side the spermatic cord and vessels, I slipped a small knife under the skin and endeavoured to insert it as far up as the internal orifice of the inguinal canal. My object was to penetrate into the peritoneum, in order to close the herniary sac at its *commencement*. Having pushed the instrument to a sufficient depth, I then moved it about so as to scarify the inner surface of the sac in all directions. The wound in the skin was

scarcely a line in extent: not more than two or three drops of blood escaped; and the patient did not complain of any pain. No unpleasant consequences followed the operation; but we are not informed as to the eventual results of it.—*L'Esculape*.

Remark.—The plan of subcutaneous incisions in various surgical maladies, as recommended by M. Guerin, is certainly well deserving of the attention of surgeons. There seems to be no danger accompanying the operation, even when important tissues, such as the capsular ligaments of joints, are divided—provided the external wound be very small, and the air be prevented from entering. Already we observe that some English surgeons have adopted the practice of dividing the contracted muscles in certain cases of spinal deformity, and apparently with decided success.—(*Rev.*)

ON HOSPITAL GANGRENE IN PARIS.

The following letter was recently addressed to the editor of the *Bulletin de Therapeutique* by M. Devergie, one of the medical officers of St. Louis hospital.

Hospital gangrene has attacked not only some of the patients of M. Jobert, but also two of the cases in my wards. In one, that of a scrofulous patient affected with swelling of the inguinal glands and numerous abscesses, the application of cinchona and charcoal powder, equal parts, moistened with lemon-juice, succeeded in stopping the disease. The other case was much more severe. There was a leprous ulceration of the upper half of the left cheek, and lower eyelid, extending to part of the forehead and of the right cheek also. The application of the *Canquoin* caustic had the effect of destroying the indurations of the right cheek; but neither this, nor the iodine ointment, the chloruret of sodium, nor various other remedies, did any good to the disease on the left side. In a short time, the wounds inflamed, their surfaces assumed a yellowish-grey hue, the suppuration became copious, and ulcerous pustules formed on the neck and behind the ear. The ulcerations on the face gradually coalesced, until the entire cheek formed one large wound. In vain I applied Dupuytren's favorite remedy, the bark and charcoal powder mixed with lemon juice; but fortunately under the use of the acid nitrate of mercury,* diluted with an equal weight of water, the mischief was arrested; in six days, the lupus was destroyed, and the wounds cicatrised with surprising rapidity, so that a perfect cure was effected, with the exception of an ectropion of the left eyelid remaining.

M. Devergie is of opinion that the cause of the hospital gangrene in the St. Louis hospital is its exposure to the unhealthy emanations from Montfaugon, (where there is a large *abattoir*, or slaughtering-house, and where there is often collected an immense accumulation of most offensive animal refuse), as the patients in those wards, which were on the other side of the building, seemed to be quite exempt from it.

* We presume that this is a solution of the nitrate in nitric acid.—(*Rev.*)

CLINICAL REVIEW.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.

REPORT ON THE RESULT OF THE OPERATIONS FOR THE CURE OF SQUINTING PERFORMED AT THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, between the 18th April, and 30th October, 1840. By CHARLES W. G. GUTHRIE, Jun. Assistant-Surgeon to the Hospital, &c. &c.

In our last Number, we noticed the interesting Report on the Operation for Squinting, by Mr. Charles Guthrie, jun. The present is a pendant to that; and, independently of containing the results of former operations, it adds some new facts, both curious and important, to the stock. We shall notice the principal points.

1. *Safety and Success of the Operation.*

"Near seven months have elapsed since it was first introduced into the Hospital and into this country, since which time I have done 340 operations for internal or converging squinting, and sixteen for external or diverging squinting. In no case has any inflammation of the ball of the eye followed the operation, neither has inflammation of any other part ensued, requiring further treatment than the application of a bandage and cold water for the first twenty-four hours. In by far the greater number of cases the eye has been exposed the morning following the operation, a dose of aperient medicine has often been omitted, poor patients have frequently gone to their work the next day, and in no one case has the slightest bad consequence followed this operation. The success has been, in cases of internal squinting, complete, and although some few have given much trouble, I have I believe arrived at that point which permits my venturing to say, that I have met with no case which is not curable; and that although in two or perhaps three cases the cure has not been as perfect as I could desire, it has been because the patients have hesitated in complying with my wishes."

2. *What is to be done if the Eye resumes its Cast.*

"When in internal squinting the operation does not perfectly succeed, the eye is sometimes perceived to resume a little of its original cast, or squint, from the eighth to the fourteenth day, or about the time, I conceive, at which the muscle becomes re-united to the ball of the eye, or to some part within the orbit, and considerable anxiety is felt by both surgeon and patient at its occurrence. It does not however follow, that the operation will not eventually succeed, and the eye be restored to its proper place by the efforts of nature alone. I have seen it do so several times, nevertheless I do not now trust to the unassisted efforts of nature when I perceive the slightest turn beginning, but direct the other eye to be padded, or kept closed, so that its vision may be from time to time effectually prevented, and the patient to use, or to try to use the remaining muscles. I do this, I believe with success, even when the eye has a turn in the opposite direction after the operation, relying on the efforts Nature will make to bring the axis of the single eye actually in use, (whether the other is covered or not,) into its proper place, even although one of the muscles, usually supposed to effect this object should have been divided; and this education of the eye is of great service, even where the padding or closing of the other is omitted.

In some obstinate cases of long standing, the eye, almost immediately after the division of the muscle, returns to nearly its pristine state of obliquity, and although the division and separation of the muscle and its attachment in every direction, in the manner I have especially indicated, until the outer or sclerotic coat is fully exposed to a considerable extent, enables us to succeed, in most instances, in effecting the object in view, it does not always do so; and in a few cases I have been obliged to desist without bringing the eye to an exact central position; or I have found it a little turned inwards on the next or some other succeeding morning. The remedy for this evil, and which generally succeeds, is to exercise the eye in a regular manner, of which Charles Marten, 18, Lisle Street, is an excellent example, and in such cases the eyes will usually be found to be naturally convergent. It may occur when the incision in the conjunctival membrane unites in the first instance by adhesion, which it will do in some cases when it is small, and the eye by turning at all towards its former oblique state, facilitates the process. I suspect also that the ball of the eye rests in its peculiar bed of fat and membrane, like a cast in a mould; and that when the eye is liberated from its squinting state, it does not remain in its new and partially unsupported position, but gradually falls back into the mould of fat and membrane originally formed around it. I am led to apprehend that the conjunctival membrane materially assists from its general attachment to the eyelids, in maintaining the eye in its old position, from which it is, however, gradually drawn in these cases by the efforts of nature assisted by art."

3. *When the Operation is followed by Squinting of the other Eye.*

"When one eye has been operated on, and restored to its proper state, and the patient is sensible he can turn it in every direction and, has so far recovered his sight as to make use of it, the other with which he knew he had an occasional cast, sometimes begins to squint more frequently, and this may become a permanent defect. In such cases, and I have alluded to them in the last edition, p. 4, there can be no hesitation about the propriety of operating on the second eye, and which succeeds in restoring both to their proper situation.

Whenever I can perceive this state to exist to an extent which I am satisfied from experience, is not likely to be removed by any management of the eyes after one operation, I recommend the patient to have them both done at once, or with only the interval of a day, so that the education required for both in seeing in a new way may go on simultaneously; and which I have found to be of great advantage in many instances,"

4. *When the Patient Squints with both Eyes.*

"In some rarer cases it will be found that the patient squints with both eyes, although he is only aware that he does so with one; and neither he nor his friends will believe it; and I now apprehend that these are the cases in which, when the operation does not fully succeed at once, it has been often thought necessary to divide, or attempt to divide, other muscles than the one originally intended to be operated on; whilst the incisions into the orbit and through the conjunctival membrane are unnecessarily prolonged, giving rise perhaps to those great protusions of the eyeball, or to loss even of eyes, both of which evils, it has been stated, have followed these operations, but which ought never to occur, and which I hope these observations will in future prevent. It is a difficult thing to persuade, much more to convince a person that he squints with both eyes, when he cannot see it himself, nor any of his friends can see him do it, although the defect in one eye is apparent to every body. Under these circumstances he submits to an operation on the eye he knows to be affected, which is easily done: but when the surgeon examines it carefully after the operation is over, and the patient tries to use it, he finds that he can still turn it inwards, and the operator sometimes thinks it necessary to cut in various directions until

the eye is sufficiently loosened in the orbit to lie in the desired position. A more cautious operator is contented to have removed the greater part of the evil, trusting to the management of the eye afterwards for its complete recovery. This was my practice, and although I succeeded in many instances, still I have found among the cases of 30, 40, and 50 years' standing, some that I could not entirely overcome. These persons have presented themselves, for the most part during the last two months, the more elderly people having begun to think that they might as well avail themselves of the advantages the operation afforded; and in the instances alluded to the patients all persisted that they squinted only with one eye, and which they readily submitted to operation; but when told they must have the other done, they as manfully resisted.

In my last, or fourth edition, I alluded to this, as I have before remarked, but I did not like to express myself more fully on the practical point, until, from repeated observations, I was quite satisfied of the fact I intended to inculcate. In such a case, that is when the eye still turns in after the operation, and I am satisfied I have done all that ought to be done, I do not persist in trying to do more, but at once operate on the other eye, whether it apparently stands in need of it or not; and I ascertain the fact of the necessity in the following manner, if it had not been done before. The bleeding if any having ceased, I desire the patient to look me steadily in the face with the eye which has just been operated on, whilst I keep the other closed. When this has been done for a few seconds, I gradually raise the lid of the supposed sound eye, and in every instance of the kind, have found it turned inwards, so much so as to cause the greatest surprise to the friends of the patient, or other bystanders, and, through their observations, as well as my own, the person at last submits to have the operation done on that eye also. It is much better they should be done at the same time, when both eyes immediately become straight, but this does not always follow so instantaneously if there is a long interval between the operations, and the first eye may require some education afterwards. But I believe that, with this improvement, the cure of an internal squint may always be accomplished."

5. *When a Patient fancies that he Squints.*

"The imagination has exercised its usual activity even in this complaint, and persons have been found who were so perfectly satisfied they squinted badly, that they earnestly desired to have an operation performed, although the obliquity was scarcely discernible. In such cases, and indeed in those in which the second eye is operated upon, when the persons were unconscious they had any deformity, I merely divide the tendon without any of its lateral attachment; thus weakening rather than destroying its power."

6. *External Squinting.*

"The operation for the division of the external rectus or straight muscle is as easily done as that for the internal one; but the result in external squinting is not always so satisfactory. It has been said that this operation does not succeed; that, strictly speaking, none have been successful, although all the cases operated upon have been improved in a trifling degree; in fact, that they only squinted a little less than before. This, and all the other observations I am acquainted with, are on many points erroneous, although in some few they may be correct.

I have however met with four cases in which this happy result did not follow to the same extent. In the first, I operated on the right eye, and brought it to the centre, but it never would turn in, the internal straight muscle seemed to have no power over it, and as the man thought himself very much improved, and did not wish anything more to be done, he absented himself from the hospital, and I have not been able to find him. The second was a perfectly similar case

—the third I have under treatment, and think I shall cure—the fourth had both eyes operated upon in the country for internal squinting by the division of the internal straight muscles, and the consequence was that both eyes turned outwards. The surgeon then divided the two external straight muscles, but the eyes again turned outwards, causing two very disagreeable casts at the same time. I have redivided these external muscles further back than before, and the right eye is cured, the left is nearly so, although a trifling cast, compared with what it was before, remains, but the ultimate result of further time and treatment are however to be ascertained. The next case I shall adduce is perhaps the most extraordinary, and will give the most satisfaction of any I suspect that have yet been reported.

Thomas Williams, aged 17, of No. 15, Crown Street, Westminster, applied on the 24th August with an internal squint of the right eye, which was operated on the same day in the usual manner, without any thing remarkable being perceived. The next day it appeared rather more out than in, and this gradually increased, so that, although he could frequently look very naturally with it, and particularly when he made an effort to do so, it was evident that it turned a very little outwards when perfectly quiescent. On trying the other eye, which he declared to be perfectly sound, in the manner I have directed to be done to ascertain its state, when the eye which has been operated upon is intently fixed on the face of the experimentalist, I found to my surprise that it was on every trial directed outwards. I informed him that the only way to make the right eye quite straight, and to turn in, was by dividing the external straight muscle of the left or sound eye. To this he demurred for some time, but at last consented, on the 28th of October, and I cannot express the pleasure I felt on finding, after the operation, that the train of reasoning which induced me to do this operation was crowned by success."

We are all very much indebted to Mr. Charles Guthrie.

GUY'S HOSPITAL.

GUY'S HOSPITAL REPORTS, No. XI. Edited by GEORGE H. BARLOW, M.A. and L.M. Trinity College, Cambridge; and JAMES P. BABINGTON, M.A. Trinity College, Cambridge, Member of the Royal College of Surgeons.

THE present Number of these valuable Reports presents us with the following Papers:—

Remarks on the Report of Syphilitic Cases (continued); by C. Aston Key. On the Treatment of Incipient Phthisis; by H. Marshall Hughes. On Disorders which are Variable, and on the Practical Inferences which are deducible from the Character of Changeableness; by T. Wilkinson King. On the Episternal Bones occasionally found in Man; by T. Wilkinson King. On some Supplementary Muscles of the Anus, described by Dr. Horner of Philadelphia; by T. Wilkinson King. Case of Transposition of the Aorta, Trachea, and Oesophagus, Tuberculated Liver, and Scirrhus-Cancer of the Rectum; by Henry Ewen.—Communicated by C. Aston Key. On the Forms of the Cartilages which keep open the principal Divisions of the Bronchial Tubes; by Jonas King. Case of Urinary Calculi, formed on a piece of Straw; by Henry Norris.—Communicated by Sir Astley Cooper, Bart. On the History of a Supposed Hermaphrodite; by Robert Merry.—Its Dissection by Sir Astley Cooper, Bart. Practical Hints on the Treatment of Stricture of the Urethra; by Bransby B. Cooper, F.R.S. Operation for the Radical Cure of a Reducible Inguinal Hernia; by Bransby B. Cooper, F.R.S. Case of Cerebral Disturbance, dependent upon Disease of the Pericardium; by Dr. Yonge.—Communicated by Dr. Bright. Observations on Diabetes: with Cases illustrative of the Efficacy of Ammonia

in the Treatment of that Disease; by George Barlow, M. A. & J. M. Observations on Abdominal Tumours and Intumescence; illustrated by Cases of Diseased Liver; by R. Bright, M. D. F. R. S.

As we believe our readers prefer the practical to the rare, the useful to the curious, we shall pick out the papers of the former class for notice first, and allude to the remainder afterwards. We shall commence with our able and excellent friend, Mr. Bransby Cooper.

PRACTICAL HINTS ON THE TREATMENT OF STRICTURE OF THE URETHRA;
By BRANSBY COOPER, F. R. S.

Mr. Cooper has already communicated one Paper on this subject to the Profession, a paper which we noticed at the time. The present is a continuation of *that*. An object of both has been to deprecate the employment of force in the introduction of instruments. In the paper before us, Mr. Cooper enters more into detail on the means of treatment than he had previously done.

"On first examining," says Mr. C. "a stricture, either a silver catheter or a bougie may be used for the purpose of ascertaining its seat and condition. No. 6 is the best-sized instrument for this object: it is nearly of the size of the urethra, and is much less likely than a smaller one to get entangled in the lacunæ of the canal. When the instrument is first passed down to the stricture, gentle pressure should be exercised, and, if its passage be resisted, should be continued for a few minutes. If the obstruction be owing to muscular spasm, continued pressure of three or four minutes will be sufficient to overcome the contraction: if after that time, however, the obstacle does not yield, its persistence evidently depends upon the density of an adventitious deposition. Where, in such a case, no great pain is experienced by the degree of pressure hitherto employed, and no bleeding occurs, force may be used, to the full extent considered safe by the surgeon: but if this is still ineffectual, no further mechanical means should be had recourse to (unless the bladder be much distended, and the symptoms of retention urgent), but leeches to the perinæum and a purgative draught should be prescribed. It generally happens, in cases of no very long standing: that great benefit is at once derived from this treatment; and I have frequently seen the patient recover after it has been adopted for three or four alternate days; but in cases of older date, great difficulty of micturition is often found to remain, in spite of it. To combat this symptom, the application of the bougie should be continued; as it is now ascertained that the difficulty of directing the instrument into the bladder depends upon the density of the stricture, and not upon muscular contraction. A new indication now therefore, presents itself, viz. the removal of the adventitious matter: this is most readily effected, by maintaining an equable degree of force upon the surface of the stricture, which induces inflammation and softening-down of the newly-formed substance. In the course of a few days, supperation will be found to have been set up; after which, five or six repetitions of the application of the instrument will be sufficient to effect its passage through the obstruction; and thus will be performed a cure of stricture in what I may term its second stage.

It is in this second stage that the precaution which I have alluded to above is necessary; for it is requisite to be as cautious with respect to the precise direction given to the instrument when thus gently applied, as when force is used to push the catheter or sound into the bladder; inasmuch as, without proper attention to the direction of the instrument, a false passage is as likely to be produced in the one case as in the other. This I shall shortly be able to shew, by relating cases in point. If gentle pressure be repeatedly made against the side of the urethra, instead of upon the stricture itself, the mucous membrane naturally yields to the continued application of the instrument; and a new pas-

sage is gradually produced, which by violence is frequently effected at once. When an opening has thus been formed in the urethra, it is not a necessary consequence that any train of symptoms should at once point out the error which has been committed. On the contrary, from the comparative facility with which the instrument passes towards the bladder, the surgeon fancies, at first, that he has overcome the true source of obstruction, and indeed frequently succeeds in reaching the bladder with his instrument, having pushed it again into the urethra, or through the prostrate gland: a flow of urine then ensues, which gives him reason to suppose that the cure is complete. On the other hand, however, the urine is sometimes extravasated, as soon as the false passage has been made; an abscess is formed in the perinæum; and all the symptoms follow inseparable from such a state of things, requiring at once the laying open of the perinæum, and the evacuation of the extravasated urine; and leading to the abandonment of the gentle mode of treatment, for the cutting through of the permanent stricture,—an operation which I have before described.”

Perhaps it is going rather far to say, that no force and force are equally likely to occasion a false passage. On the *gutta cavat lapidem* principle, the frequent mal-application of a catheter, with gentleness, may send it out of its track, yet still we should doubt its doing so as frequently as the violent employment of the instrument.

Mr. Cooper's opinions are necessarily possessed of weight, and ought to influence the surgical world. Yet as sentiments and practice differ, we are ourselves disposed to give the preference to another method. If a patient presents himself with stricture, we ascertain, as well as may be, the dimensions of his stream of urine, if he makes one. And we take an instrument, a gum or a metallic catheter or bougie, about that size, or rather smaller, and attempt its introduction, generally with success. If the water only dribbles and the stricture is a bad one, we must say that we are advocates for beginning with the cat-gut or the wax bougies of the smallest size. In many instances, to say the least, this may be introduced, and if it is, the rest is but a matter of time. If it cannot be got in, the gum or silver catheter is in reserve. Should that be small or large? Our predilections are for the small. The metallic one should be employed with delicacy and with address, no doubt, and force is seldom justifiable. But, so far as we have seen or can determine, the small instrument, gently used, is safe and serviceable, more so, indeed, than the large.

Mr. Cooper admits, what we fear is too true, the frequency of false passages. If our own experience is to be trusted, violence has, in almost all instances, been father to them. Mr. Cooper remarks:—

“In cases where a lengthened false passage has been made into the bladder, and where no extravasation of urine has followed, it becomes very difficult for the surgeon to ascertain, with certainty, that the fistulous passage exists: and I believe that this can only be done by those who are in the habit of frequently passing instruments into the bladder. As, however, such passages are frequently made in the upper region of the urethra, their false course may be ascertained from the fact, that a straighter instrument than the one usually employed will pass through them with facility; and that when in the bladder, the instrument wants the freedom of motion exhibited by the catheter, which has been passed through the urethra only. If the false passage has been made in the lower part of the urethra, the instrument will be found to move in the segment of a larger circle than usual; and its escape from the urethra can always be ascertained by passing the finger into the rectum. False passages of the lower region are generally the result of the forcible use of the instrument for strictures in or near the bulb; while those of the upper part are a consequence of the continued pressure made upon the obstruction, with the penis drawn forward to fix the point of opposition. In both of these cases, although the

patient, from the absence at first of any difficulty in emptying his bladder, may imagine himself permanently relieved, he is doomed to be very quickly disappointed: should the surgeon allow only a few days to elapse without passing the instrument, the obstruction to its progress, and the difficulty in voiding the urine, recurs; for the new canal is incapable of remaining many days pervious, without the frequent passage of the catheter; unless, indeed, a mucous lining membrane is formed within it; to produce which, a considerable length of time is necessary. A case of this kind occurred to me; in which, after having passed the instrument for several weeks, in the belief that I had re-established the natural canal, it at length, on a sudden, took a new course into the bladder; and this proved to be through the natural urethra. Probably this took place from the stricture having been spontaneously cured by the removal of the irritation from the urine, which for some time previously had passed through the new canal. The patient subsequently suffered no inconvenience from the false passage which had been made; nor had I ever, after the discovery, any difficulty in passing the instrument into the bladder through the natural canal. I cite this case, not because I believe it to be of rare occurrence, but merely because the discovery of it is uncommon. I think, indeed, these false passages to be so frequent, as to be present in most of those cases where difficulty of passage continues whilst the patient is under treatment: at all events, post-mortem examinations of the urethra, in cases of stricture, shew that these deviations from its natural course are extremely common."

When we have had reason to suspect the existence of false passage, (and a good anatomist can scarcely fail to *suspect* it sooner or later, if there is one) we have seized the opportunity (if it offered) of an instrument reaching the bladder by the true one, and confined the patient to bed, with the instrument tied in. So soon as it is loose and suppuration is freely established, a larger one may be substituted for it, and by this means the proper canal of the urethra may be dilated with rapidity. Elastic catheters answer best. It is a common practice and we merely mention it in connexion with this particular case.

Caustic.—"In cases of stricture which resist the application of the common bougie or catheter,—for sometimes, owing to the great density of the adventitious substance, these instruments will not succeed in causing the latter to soften down, even though they may be used for several days or even weeks in succession,—in such cases, the caustic bougie must be had recourse to; not merely as an escharotic, to decompose the part, but that it may, by its peculiar action, induce inflammation, softening down, and suppuration. A successful result generally follows a few applications of this instrument: and although in some cases it may be delayed, I have never seen it fail to produce, sooner or later, a beneficial effect. There are occasions in which its efficacy is exhibited with singular rapidity. For instance, in a case of obstinate permanent stricture, for which I had been several weeks attempting to pass instruments without success, I at last easily succeeded in introducing a catheter into the bladder, after passing eight times only the caustic bougie; and the patient ultimately recovered and has never had any recurrence of the disease.

The caustic bougie is also of the greatest benefit in irritable stricture, which is always attended with bleeding on the gentlest application of the instrument, and with frequent sudden spasms, occurring without any apparent cause, beyond slight exposure to cold and damp, or some excess in the use of wine or spirits, and which render micturition difficult. I need scarcely observe, that the cautions I have described above, as to the precise application of instruments to the stricture itself, are most especially to be observed in making use of the caustic bougie; or that a false passage is very likely to be produced, if it be made to press and act on the urethra itself, instead of on the adventitious matter."

Mr. Cooper relates three cases in illustration of the preceding observations,

and of the benefits derived from the use of the caustic bougie. They do not appear to us, we must confess, conclusive, and, having at one time seen a good deal of the application of caustic to strictures, our opinions of it are not quite so favourable as Mr. Cooper's. These are points, however, on which perhaps surgeons will never be perfectly unanimous.

Mr. Cooper relates several cases in which the operation of cutting through the stricture was performed. They ended very satisfactorily.

The profession ought to feel indebted to Mr. Cooper for these useful communications.

ON THE TREATMENT OF INCIPIENT PHTHISIS. By H. MARSHALL
HUGHES, M.D.

Dr. Hughes remarks that, from the pathological investigations of Laennec and others, it has, of late years, been considered possible that tubercular cavities, after collapse and contraction, may become effaced by the adhesion of their parietes; or that, from their limited extent and inactivity, they may cease to be a source of danger, or even of inconvenience: and therefore, that if tubercles exist not in other parts of the lungs, the cure of advanced phthisis may be spontaneously effected. The morbid anatomy of the parts upon which this opinion has been founded, may, in some instances, have been investigated with too little care, and the supposed facts may have been received upon insufficient evidence; but that tubercular cavities may contract, collapse, and become inactive and innocuous, is a belief too securely based, and too strongly supported, to be materially affected by the doubts expressed in the recent work of M. Fournet. The cure, however, of phthisis, in its advanced stage is, at all events, extremely rare, and the influence of art on it erratic and indeterminate.

But though, continues Dr. Hughes, when tubercles are numerous or softened, or when large excavations exist in the lungs, we yet need remedies to stop the progress of the disease, there appears to be no sufficient reason for believing that scrofulous matter may not be absorbed, or so altered as to cease to be a source of irritation in the lungs, as well as in other parts of the body, as the glands of the neck or mesentery; and therefore that phthisis, in its early stages may not be cured, or at least indefinitely suspended. That, by the early adoption of general as well as local treatment—of hygienic combined with medical means—the incipient disease may be subdued, and that the further deposition of tubercles may be prevented, is an opinion which is now general, and rapidly increasing.

Dr. Hughes, after adverting to Sir James Clarke's excellent treatise on consumption, and to Dr. Carswell's views of the nature of tubercle, thus professes his own creed:—

"Tubercular phthisis, then, I believe to be a constitutional affection, either hereditary or acquired, in which an unorganizable matter is eliminated from the blood in a fluid state, together with the natural secretions of the parts affected. I suppose that this matter becomes at length solid, by the absorption of its fluid constituents, and either remains upon, or is more or less quickly removed from the surfaces on which it is deposited, according to the entire want or to the freedom of communication of those surfaces with the natural outlets of the body;—that its principal seat is the free surface of the mucous and serous membranes;—and that its most frequent locality, when affecting the lungs, though occasionally infiltrated through all the tissues of the organ, is the mucous membrane of the air-cells and smaller bronchial tubes. I moreover believe that this deposit or secretion, though it not unfrequently occurs without any decided or observable increased action of the vessels of the lungs, and is therefore not at first characterised by any marked thoracic symptoms, is, when the

predisposition already exists, often induced, promoted, and increased by bronchitis, and other inflammatory affections of the tissues, by the vessels of which it is secreted."

Dr. Hughes does not so much allude to the management of the constitutional affection, but rather confines himself to the treatment of the pulmonary disease. He first alludes to the principal remedies he has employed.

1. *Emetics*.—At first Dr. Hughes prescribed them only in advanced phthisis—latterly in the incipient. He has tried many and various forms. The following are the results of his experiments.

"I believe that either the simple sulphate of zinc, or ipecacuanha, in doses of twelve grains, or a combination of six grains of ipecacuanha and two of sulphate of copper, are the most desirable forms and proportions that I have used. Smaller quantities have occasionally failed. Under these circumstances, nausea, but no vomiting, and on one or two occasions diarrhœa, have been induced by the medicine. The emetics have been directed to be taken in a few ounces of warm water, about an hour before breakfast, every morning; or every second, third, or fourth day, according to the strength of the patient and the character of the disease. Their uniform effect, with I believe a solitary exception, has been very materially to relieve, and, in not a few instances, entirely to remove the cough. On several occasions, when they have not been taken every day, patients have been requested to observe whether their cough was better on those days in the morning of which they took the emetic. The answer has generally been decidedly in the affirmative; but it has certainly sometimes been, that though the cough was much lessened, it was not especially so on any particular days. But the decrease or cessation of the cough has been far from the only benefit derived from the use of emetics. Their effect in relieving dyspnœa, oppression of the chest, and load at the scrobiculus cordis, has been often surprising to the patient as well as the physician. The appetite has often improved under their use, and the whole system has appeared invigorated. Only a few days since, a patient said: 'ever since I began to take the powders, my appetite, which before was bad, has been ravenous.' Their effect, also, upon the expectoration has been very marked but various. In some cases, when previously profuse, it has been checked, and in others stopped; and while some patients have observed 'they brought up the phlegm more easily,' others, whose cough had before been dry, have experienced ease from the excited secretion of the bronchial membrane. It must however be confessed, that some have complained of the continuance of languor and nausea for a considerable part of the day, and of the exhaustion which they have temporarily endured. But even in these cases I have never yet known any permanently injurious consequences result from their frequent employment."

He admits that discrimination should be used in selecting the cases for their exhibition. As a general rule, the earlier the stage, and the more chronic the character of the disease, the greater has been the benefit derived from their operation. In many cases of incipient phthisis, they, combined with other means to be afterwards mentioned, have certainly checked and apparently removed the complaint; and in some examples of old chronic disease, accompanied with evident dulness below one or both clavicles, but without any evidence of cavities or softening tubercles, great and obvious advantage has resulted from their use. In acute or febrile phthisis, they, like every other remedy, have seemed to do little good. Where considerable debility and much perspiration have existed, the advantage derived from them has been doubtful; and when hectic has been present, and softening has decidedly commenced, they have not seemed to check the progress of the disease. Yet they have often given considerable temporary relief, and Dr. H. not only believes them the most effective

remedies in the early stage of phthisis that he knows of, but that they hold out a probable hope of the cure, or, at least, the suspension of the malady.

2. *Depletion*.—Dr. H. has never ordered venesection, unless there have been symptoms, as hæmoptysis or pneumonia, which appeared to indicate the necessity of employing the lancet. Local bleeding has, however, been prescribed extensively and advantageously, especially in cases in which, from the physical signs, there existed evidence of bronchitis in that part affected with tubercles, or of local pneumonic consolidation resulting from their deposition. Three or four ounces of blood have been taken by cupping, or six or eight leeches have been applied below one or both clavicles, and have been repeated in three or four days, or a week, if auscultation has proved that the local inflammation has not been removed or materially reduced. The effect of this practice has been very beneficial; and the patients have loudly expressed the relief it has afforded them. Unless, however, local congestion, bronchitis, or pneumonia has been present, even topical bleeding has not been prescribed.

3. *Counter-irritation* has generally been ordered in different forms, according to the nature of the cases in which it was to be used. In those accompanied with local bronchitis, after, or in some instances without, the use of topical bleeding, small blisters have been applied below the clavicles, and repeated once or oftener, according to the effect produced. In the more chronic forms of the complaint, the tartar-emetic ointment has been preferred; while in the cases in which the patient has been delicate, and susceptible, in which there has been in a more or less abundant clear serous-looking secretion from the bronchial membrane, occasionally mixed with streaks of blood—whether there has been tolerably decisive evidence of the presence of tubercles in the lungs, or no physical signs of their existence, and merely a fear of their probable deposition—or whether softening has already commenced, Dr. Hughes has ordered the liniment, composed of acetic acid and turpentine, recommended by Dr. Stokes, to be freely rubbed on the chest, night and morning. The effect of the blisters has been in the particular cases for which they have been ordered, as in ordinary cases of bronchitis unaccompanied with tubercles, almost always beneficial. The liniment—which, for the purpose of extemporaneous prescription in hospital and dispensary practice, has been composed merely of one ounce of strong acetic acid and two ounces of spirit turpentine shaken together—has been of very great service. The advantage derived from the use of the tartar-emetic ointment, and other counter-irritants, in the chronic examples of the complaint, has been much less decided. Dr. H. doubts, indeed, whether, when ulceration has not already commenced, any positive benefit has resulted from their application.

We cannot say that this quite accords with our own observation and experience. Small leechings, occasionally employed, succeeded by the use of either blisters, the liquor lyttæ, or the tartar-emetic in ointment or in plaister, have, in our hands, been productive of much service.

4. *Antimonials* have been principally ordered in the cases accompanied with bronchitis and the expectoration of viscid frothy mucus. Under such circumstances, the tartate of antimony, in doses of one-eighth or one-sixth of a grain, with or without a few grains of the extract of conium, has been given with good effect, but has been withheld immediately the inflammatory symptoms have ceased. In another, and in many respects an opposite class of cases, in which cough, accompanied with, and in some instances apparently dependent on, unusual dryness and irritability of the bronchial membrane, has been the symptom principally complained of, Dr. H. has prescribed the antim. oxysulphuret. in doses of from five to eight grains, to be taken three times a-day. The operation

of the medicine has been uncertain. In some instances, it has produced no effect, either good or bad ; while in others, very marked relief, occurring simultaneously with the appearance of the bronchial secretion, has followed its administration.

Iodine.—It was not unnatural to resort to it in phthisis. Let us hear what Dr. Hughes has to say of it. By him iodine and its preparations have been freely and frequently administered, and in some cases with very excellent effect ; the patient's appearance having improved, and his strength increased, under their use. In others little or no benefit was derived from their employment, and the patients have gradually discontinued their attendance ; while in some few, the cough has been aggravated, and the stomach has been rendered irritable by the medicine even in small doses. It has been given in doses of one-twelfth to one-eighth of a grain, with two or four grains of the iodide of potassium, and half a drachm or a drachm of syrup of poppies, either in simple water, or more commonly in the infusion of calumba. Dr. H. states his conviction, that iodine and its preparations are very valuable remedies in the treatment of incipient phthisis.

Sedatives.—Dr. H. has only prescribed them to quiet the cough, and occasionally procure rest. When the cough has occurred in paroxysms, hydrocyanic acid has been sometimes given with temporary benefit ; though its action has certainly not been so strikingly advantageous, even under such circumstances as some Italian physicians have represented it. In other cases, a few grains, of conium have been added to other important remedies ; and either it, hyoscyamus, or the muriate of morphia, has occasionally been given at bed-time, to procure sleep.

Tonics.—When the local irritation produced by tubercles has been subdued, or when it has not existed, tonics have been freely administered, with the view and hope of improving the general health of the patient and of changing that morbid condition of the fluids and solids of the body upon which the secretion of tubercular matter probably depends. They have usually been given in conjunction with iodine : but where this medicine has disagreed, or not acted beneficially, either the oxide of iron, or the tinct. ferri sesquichlor., has been combined with a bitter infusion : or a grain of sulphate of iron, and one or two of the sulphate of quinine, have been prescribed with infusion of roses. Together with these have been ordered as nutritious a diet as the stomach was able to digest, or bear without inconvenience ; moderate exercise in the open air ; and where they were attainable, the use of horse exercise—a residence in the country, where the air was mild and dry—and a constant exposure to its invigorating influence, which Dr. Hughes regards, and we agree with him, as the best tonics of all. In fact, so far as we have seen, tonics are much abused, and often mischievous.

Dr. Hughes concludes his paper with a notice of the principal forms of phthisis, and the remedies generally useful in them.

1. *The Bronchitic.*—That variety, of by no means unfrequent occurrence, in which a person who is either hereditarily or accidentally predisposed to consumption, but who, with the exception of great susceptibility to catarrh, and the existence of more or less marked indications of tubercular cachexia, has hitherto presented none of the ordinary pulmonary symptoms of phthisis, is troubled after an ordinary cold—perhaps but little more severe than usual—with a persistent cough, with frothy mucous sputa, hurried respiration, and slight febrile excitement. On examination of the chest, there are discovered, *confined to the apex of the lungs*, a mucous rattle, which is generally distinguishable, by a delicate and well-educated ear, from the “moist crackling” of softening tubercles ; an

increased resonance of the voice in one or both infra-clavicular, acromial, or supra-scapular regions; and sometimes, by accurate comparison with other regions, a slight dullness or modification of sound, on percussion of the parts affected. In these cases, the use of cupping, or the application of leeches, below the clavicles, with the internal exhibition of a sixth or quarter of a grain of tartrate of antimony, sometimes combined with two or three grains of the extract of conium, and an occasional saline aperient, have been first prescribed, for the reduction of the local inflammatory symptoms. If, in a week, they have not ceased, or been materially diminished, the remedies have been repeated, or the topical bleeding has been replaced by small blisters. When the bronchitic symptoms have disappeared, as they usually have under this mode of treatment in a few days,—and when cough, hoarse, dry, or rough inspiration, with an increased duration or intensity of the expiratory murmur, and slight modification of the voice, have been left behind,—emetics every other morning, a mixture containing iodine, and the acetic acid and turpentine liniment, have been employed with very excellent effect. After the use of these for a few weeks, the patient has often presented no other general symptom of his complaint than a pale face and slightly accelerated pulse. Tonics, country air, and a nutritious diet, have then been recommended; and their use, when attainable, has been followed with great improvement of the general health, an increase of flesh and colour, and sometimes with an absolute removal of every physical sign of tubercular deposit, except perhaps a very little hoarseness of the respiration.

It is not always, however, that things go quite so favourably as this.

The Hæmoptysic.—"If a person of apparently vigorous constitution, and in good health, whose respiration has been previously unaffected, or whose dyspnoea has approached so gradually as to have escaped the observation both of the patient and his friends, has been suddenly attacked with hæmoptysis to a large amount, which, by appropriate treatment previously adopted, has been subdued, and has not since recurred; if, since the occurrence of the hæmorrhage, he has been constantly troubled with a cough, from which he had not before suffered; if the presence of pulmonary congestion has still been indicated by dyspnoea, partial turgescence of the face, a full though soft pulse, and a sibilant or sonorous rattle, mixed at some parts with soft crepitation; venesection, with saline aperients and the mineral acids, have been at first ordered, and have been followed by topical bleeding or blisters. If the hæmoptysis has recurred, or has only recently taken place, a mixture, containing the acetate of lead, acetic acid, and opium, has on some occasions been added to the means already mentioned; and, in others, a tea-spoonful of the spirits of turpentine has been ordered, to be taken at the accession of the hæmorrhage. This last remedy I have sometimes known almost immediately to succeed, when other medicines had failed in arresting the bleeding. In other examples, in which, after coughing up a small quantity of blood, the sputa have continued to be tinged with that fluid, or in which the expectoration has contained only a few streaks,—and the patient has at the same time been of lax fibre, with a small and feeble pulse, and without any febrile excitement,—I have, together with saline aperients and a blister, given eight or ten minims of tinct. ferri sesqui-chloridi three or four times a day, with very great benefit."

Dr. H. has never known emetics either excite or reproduce the hæmorrhage. Yet he is chary of them, until hæmoptysis has passed away.

The Simple Chronic, which includes those cases not accompanied by either bronchitis or hæmoptysis. In this form of the complaint, emetics have generally been ordered to be taken every morning, and have often been continued for three or four weeks; the frequency of their repetition, and the continuance of their use, being regulated by the duration, the decrease, or cessation of the symptoms.

Their effect upon the cough has been really astonishing; and their influence upon other symptoms, though perhaps less obvious, has been exceedingly beneficial. In conjunction with frequently-repeated emetics, iodine, in the form previously mentioned, has been always administered in these cases; and the tartar-emetic ointment, as a counter-irritant, at the same time applied to the infra-clavicular regions. When the cough has entirely ceased, and most of the physical signs have disappeared, more decided tonic remedies, as the iodide or sulphate of iron, a nutritious diet, and country air, have been recommended.

A valuable paper.

OBSERVATIONS ON DIABETES: WITH CASES ILLUSTRATIVE OF THE EFFICACY OF AMMONIA IN THE TREATMENT OF THAT DISEASE. BY GEORGE H. BARLOW, M.A. & L.M.

The following paper is one of a kind that the improved state of modern organic chemistry is giving rise to. Hypothetical perhaps, yet displaying theory based on science, and very superior even in its errors to the speculative spirit of the olden time.

Dr. Barlow observes that the opinion of Sydenham is rather gaining ground that diabetes is referable to a derangement of the stomach and chylopoietic viscera, rather than to a perverted action of the kidneys. This opinion he canvasses chemically and ingeniously, if not satisfactorily.

He quotes Müller for the purpose of shewing that the urinary secretions are "the means of carrying out of the system decomposed and effete animal matter such as urea and lithic acid (the essential components of the urine), superfluous saline matters, and, either in an altered state or in their original condition, foreign matters which have accidentally entered the circulation." Dr. Barlow adds, that the urea and lithic acid, the essential components, are highly azotized combinations; whilst in the graminivorous mammalia the place of the lithic acid is supplied by hyppuric acid, a substance containing little more than seven per cent. of nitrogen: so that, of the great depurating organs of the body, the office of the lungs appears to be, to separate carbon in the form of carbonic acid; the liver removes carbon, hydrogen, and nitrogen, but chiefly the former; so that it may be regarded as in great measure co-adjutive or supplementary to the lungs, but as having a superadded function of its own: the kidneys, again, separate carbon, hydrogen, and nitrogen, but principally the latter (as well as superfluous water; so that they are in some measure co-adjutive to the former, but have a superadded function of their own; the skin, again, is supplementary to all the rest, but particularly the kidney, and has an additional function of its own.

"Upon this view of the subject," he argues, "we should expect that the office of one of these organs may be wholly, or in part performed by one or all of the others; and, accordingly, comparative anatomy teaches us, that in the different classes of vertebrate animals, the development of the liver increases in the same measure as the respiration diminishes; being at its maximum in fishes, at its minimum in mammalia, and having its mean amongst reptiles: whilst we learn, from every day's experience, that when the bile ceases to be poured forth by the ductus choledochus, it makes its appearance in the urine.

The presence, therefore, in the secretion of one organ of a substance more nearly allied in its elementary composition to that of another organ, should rather be ascribed to a defective performance of function in the latter, than a perverted action in the former; or, in other words, the presence of a highly-carbonized product in the urine would indicate impaired function of any other excreting organ rather than of the kidney. Hence the *a-priori* arguments to be drawn from the physiology of the kidney are opposed to the belief that the

presence of sugar in diabetic urine is the effect of a morbid condition or action of the kidneys.

Again, what is to be inferred in reference to this subject from the pathology of other morbid conditions of the urine ? or what do other morbid products indicate ?

Not to encumber this communication, the object of which is more especially of a practical nature, with observations not bearing directly upon the subject before us, it will be sufficient for our purpose to remark, that of all the other morbid contents of the urine, there are none except those which are component parts of healthy blood, the presence of which has been traced to disease of the kidney ; consequently, the knowledge we possess of the pathology of other diseased conditions of the urine affords no *a-priori* reason for ascribing the presence of sugar in the urine, which is never found in healthy blood, to disease of the kidney.

Since, then, there is no antecedent probability that the presence of sugar in the urine is the result of any lesion of the kidney ; and since sugar has been detected in the blood of the subjects of diabetes by Mr. McGregor, Ambrosiani, and Dr. Rees (the latter of whom has proved that it exists in considerable quantities) ; it would be well to inquire, how far its presence in that fluid is capable of accounting for the symptoms of this disease :—and, first, as regards the urine.

It appears, from the conclusions drawn by Wobler from his researches, ‘ that all soluble, and not gasiform matters, which do not suffer decomposition in the system, are got rid of by the kidneys :’ whence it is evident, that sugar, being taken up into the blood, must necessarily appear in the urine. It has indeed been argued, that the quantity of sugar found in the blood of diabetic patients is not sufficient to account for the quantity in the urine. This objection can, I think, have little weight, when we consider how quickly many soluble substances, when introduced into the system, are expelled by the urine. Again, it appears that those matters which are prone to pass out of the system by any particular secreting organ are stimulants of that organ ; as is seen in the stimulant action of the neutral salts on the kidneys ; whence sugar, being present in the blood, and being separated from it by the kidneys, must necessarily increase the flow of urine.

There remains one other condition of the urine to be noticed ; namely, the diminished quantity of urea. This deficiency is, however, by no means certain ; as it has been called in question by several very able chemists : amongst others, by Mr. Kane. It may not, perhaps, be satisfactorily made out, that urea is expelled in this disease in as large quantities as in health ; but I think that it has been shewn that enough is separated to confute the opinion frequently expressed that sugar is formed instead of urea. Indeed, I should be inclined antecedently to expect it would be deficient in this disease ; since nutrition and excretion being, in health, antagonist processes, it is not improbable that the diminution of the former by disease may induce a deficiency of the latter.

It appears, then, that the presence of sugar in the blood is of itself sufficient to account for the abnormal condition of the urine.”

The thirst and dryness of the skin may be ascribed to the drain of water from the diuretic action of the sugar—the hunger to the atrophy, the consequence of the deprived state of the blood. Then which is the erring organ ? Dr. Barlow reasons thus :—

“ The circumstance of the morbid ingredient being a highly carbonized substance might at first lead to the belief that either the lungs or liver, or both, were involved in its causation ; and it is probable that they are more or less implicated ; but the fact, that sugar has been discovered by Mr. McGregor in the stomachs of diabetic patients in greater quantities than in health, even when such patients have been almost entirely restricted to an animal diet, affords a

proof that the derangement in sanguification must take place when the nutrient fluid is in an earlier stage than that in which it is subject to the action of these organs ; and that the primary disturbance may be traced to the primæ viæ. And here it would be well to reflect upon the product of digestion in health, and in this disease. I again quote the words of Müller.—‘The end and object of digestion is, first, the solution of the food, since nothing can be taken up by the absorbent vessels which is not in solution ; and, secondly, the reduction of the different ingredients into the most simple material of the animal processes, namely albumen, which is found to be contained in the fluid resulting from the digestion of the food, partly in the state of solution, and partly in globules. The essential character of the digestive process consists in its not only effecting the solution of the food, but in its likewise annulling the peculiar properties which the nutritive matters may owe to the source whence they are derived ; that is to say, in dissolving the food, and converting all into albumen.’

In this disease, on the contrary, the saccharine particles of the food are not changed in the stomach ; whilst the starch, which most articles of vegetable diet contain in considerable quantities, not having its peculiar properties annulled, and its proneness to the saccharine fermentation being favoured by the warmth and moisture of the stomach, is converted into sugar, which, being readily soluble, is absorbed into the circulation.”

Thus, from some defect in the assimilating power, a lower product, starch, is found in lieu of a higher one, albumen. The former is inadequate to the purposes of the economy, and is eliminated by the kidney. It is not, however, actually proved that there is a diminished quantity of albumen in the blood, though that is probably the case. Let us turn to the remedial principles founded on the preceding views.

“The next inquiry is, what are the inferences to be drawn from it respecting the treatment of diabetes. The first is obviously one, the correctness of which has long been acknowledged, and confirmed by experience ; namely, the avoidance of all saccharine and amylaceous articles of food ; the latter of which, from their tendency to saccharine fermentation, are, I believe, productive of as much mischief as the former. I have, however, little to add to what is generally received upon this point, further than to insist on the advantages of the cruciferous vegetables as articles of diet, the use of which is not in accordance with the view taken above, but has received the sanction of many experienced physicians. Not only do greens, broccoli, turnip-tops, sea-kale, water-cresses, &c. tend to obviate the loathing which is often felt by these patients when restricted to an animal diet, but they exert a decidedly beneficial influence over some of the symptoms : and it will be seen, in a case to be related presently, the discontinuance of the use of greens was always followed by increase in the flow of urine.

The next indication appears to be, to introduce into the stomach a highly azotized substance, and at the same time, by a diffusible stimulant, to exalt, if possible, the assimilating powers of that organ ; both which ends appear likely to be attained by ammonia.

There is one circumstance connected with the employment of ammonia in this disease ; upon which, however, I do not wish to lay great stress, although it is at least a coincidence too remarkable to be passed unnoticed ;—I mean the chemical relation of sugar, ammonia, and albumen, as regards their elementary composition. Thus we find, that when the numbers which represent the atomic composition of ammonia and sugar are added in certain proportions, we obtain a result which exactly coincides with the numbers representing the atomic composition of albumen, increased by certain equivalents of carbonic acid and water, substances which are continually excreted from the body.

	Carbon.	Hydrogen.	Oxygen.	Nitrogen.
9 Equivalents Sugar.....	55.08	9	72	0
-|- 1.1 Equivalents Ammonia...		3.3		15.56
	55.08	12.3	72	15.56
- 5 Equivalents Water.....		5	40	
- 1 Equivalent Carbonic Acid...	3		8	
	52.08	7.3	24	15.56
Which, reduced to 100 } parts, gives ... }	52.63	7.37	24.25	15.73
Albumen (according to } Gay Lussac & Thenard.) }	52.88	7.54	23.87	15.70"

Dr. B. has found that under the use of the sesqui-carbonate of ammonia the function of the skin is generally restored; though he has sometimes thought that opium assisted in effecting this result. Such exercise as the strength of the patient will enable him to take, and the use of a warm bath occasionally, where it can be obtained, are also valuable adjuvants. The accumulations which not unfrequently take place in the large intestines are best removed, he thinks, by a purgative with a tonic—rhubarb and sulphate of potass, aided, if requisite, by castor oil, are preferred by him.

Dr. Barlow relates five cases. We shall select the first as a sample, and perhaps a favourable one of the whole. For the remainder are unfortunately far from conclusive as to cure, though conclusive enough as to benefit. They resemble many other cases, treated by many other remedies, that have been from time to time brought forward with the flattering anticipation of more decided and permanent advantage than has been obtained. We fear that we can hardly dare to look to a diffusible stimulant, as a means of a class that *must* have been often tried by doctor and patient, for victory over so intractable a malady. But to the case.

Case 1.—Stanley, a shoemaker, applied to me, at the Surrey Dispensary, in the summer of 1836; stating that he had been told that he was the subject of consumption, having lost flesh and strength very rapidly for about a month. I accordingly examined his chest; but could detect none of the physical signs of phthisis. Upon further inquiry, I learned that he had for some days been struck with the great increase in the quantity of his urine, which amounted to fifteen pints in the twenty-four hours. He was, moreover, much emaciated: his skin was very harsh and dry, which he told me was the case by night as well as by day: his tongue was loaded; he complained of great thirst; and said that his appetite was excessive. His urine was sweet to the taste, and of sp.gr. 1.041. He was at first put upon the use of one grain of opium every four hours; some castor-oil being ordered occasionally, to regulate the bowels: the rules respecting diet, above laid down, being also enjoined.—At the end of five days his urine was much diminished in quantity; but the specific gravity increased to 1.044: he was also at that time in a state of great prostration, which was perhaps in some measure attributable to the opium. He was then ordered to take six grains of the sesquicarbonate of ammonia three times a day, in a draught containing one drachm of sp. lavend. comp.; and five grains of Dover's powder every night: by continuing which, the quantity of the urine was, at the end of eight days, reduced to twelve pints in twenty-four hours, and the specific gravity had decreased to 1.035: he also perspired moderately at night, and the thirst was much abated. I now increased the quantity of the ammonia to eight grains every four hours; under the use of which, the quantity and specific gravity of

his urine rapidly diminished; and at the end of six weeks he had so far recovered his flesh and strength, that he considered himself well, and left the Dispensary. At the end of five weeks, however, he again presented himself; stating that his former symptoms had returned. His skin was then harsh and dry; and he told me that his urine rather exceeded two gallons in twenty-four hours. He had lost flesh considerably since I had last seen him; but he was not so much emaciated as when he first came under my care. His tongue was clean, but moist, and his breath had the odour of hay. He was treated in the same manner as before; and at the end of two months he was again discharged, apparently in good health; his urine being about three pints in quantity, without saccharine taste, and of specific gravity 1.020.—I ascertained that this man was in good health in the summer of 1839."

Dr. Barlow has our thanks for his Paper. It deserves consideration.

OPERATION FOR THE RADICAL CURE OF A REDUCIBLE INGUINAL HERNIA.

By BRANSBY B. COOPER, F. R. S. &c. &c.

The following case is very interesting.

A man, aged 22, tall and muscular, had had a reducible inguinal hernia on the right side for seven years, when, on the 26th of May, 1840, a larger portion was forced down, and was, with difficulty, returned in Guys Hospital. On the slightest exertion, however, the hernia descended again. The man was employed on the Greenwich Railway, and severe exertions were necessary. These were out of the question with such a hernia, which no truss could be got to keep up. Mr. B. Cooper accordingly deemed it a fair case for the operation recommended by M. Gerdy.

On the 10th of June, the patient was brought into the operating theatre, and laid upon a table, on his back, with his chest and thighs raised, for the purpose of relaxing the abdominal muscles. Mr. Cooper then commenced the operation by pushing a portion of scrotal integument before the forefinger of his left hand, through the external ring, into the inguinal canal, as high as he could pass it; and upon the finger he then introduced a director. A long needle, fixed in a wooden handle, and having the eye, near its point, armed with a double silk ligature, was then carried along the director to the very extremity of the invaginated skin, and was pushed through the tendon of the external abdominal oblique muscle and the skin, so as to make its appearance an inch and a half above Poupart's ligament: one end of the silk was then retained by an assistant, and the needle drawn back again into the inguinal canal, along the other end; when it was again pushed through the abdominal praetetes, in a similar manner as before, about four lines distant from the other end of the thread, including necessarily so much of the skin between the two silks; which were now tied over a piece of bougie, so as to retain the invaginated portion of skin within the inguinal canal. A piece of lint, wrapped around a director, and dipped into liquor ammonia, was passed into the cul-de-sac of skin thus formed; and the surface well rubbed with it, in order to remove the cuticle, and promote an inflammation in the cutis, so as to obliterate this integumentary canal, and to form a plug sufficiently firm to prevent the future descent of the hernia.

The application of the ammonia caused intense pain.—The patient was now taken to his bed, placed in the same position as before the operation, and the scrotum well supported. An hour and a half after the operation, a great pain was still complained of, a grain of opium was given, which afforded but little relief. At nine in the evening, Mr. Cooper saw him; at which time there was great distress of countenance, profuse perspiration, and the pulse quick, but compressible; and there was not any pain produced by pressure on the abdomen.

We need not pursue the diurnal details. The symptoms of irritation gradually passed away. A discharge, of purulent character, from the invaginated skin made its appearance on the 12th. On the 13th, the scrotum was strapped up, so as to press against the margin of the opening from the invaginated portion of the skin.

14th.—The ligature was removed, as purulent discharge was now most freely established: but the pressure on the part was desired to be continued, and every thing seemed to be going on favourably. But on the next day there appeared a degree of fulness about the margin of the opening, as if a portion of the inverted skin had descended; but without any descent of intestine, and the hardness and swelling about the inguinal canal still led to the reasonable hope that the operation would prove successful. In this state he continued for several days, until the tenderness about the inguinal canal had sufficiently subsided to allow of a greater degree of pressure being made upon the part; the patient being still kept in the recumbent posture.—After that time all uneasiness had left him; and the patient described that he felt the affected side as firm as the other; which the thickening in the course of the canal seemed to justify. On the 4th of July, a weak truss was adjusted to the part; and he was still desired to remain in bed: which he did for ten days more, when they could no longer keep him in bed. He remained yet a fortnight in the hospital, wearing his truss, and walking about without any descent of the hernia occurring; and left Guy's at the end of July, to resume his occupation on the rail-road, with the promise of being, at first, put only to slight work. This was observed, and early in August, he resumed his old occupation as hammer-man, a more severe one. Unfortunately, he was only protected by the weak truss which was given to him while in the hospital; so that, upon one occasion, a portion of intestine again descended into the inguinal canal, while at work. A much stronger truss was then substituted for the weak one; and since its application, he has had no return of his complaint, but is enabled to perform all the duties of his situation.

Mr. Cooper observes:—It is true, from the history of this case, that the operation has not entirely succeeded, not having led to the perfect obliteration of the inguinal canal: but still it is to be remembered, that, before he submitted to it, no truss could prevent the descent of his hernia rendering him entirely incapable of the slightest exertion; while now, on the contrary, by the use of a common truss he is rendered an efficient labourer: and there is little doubt, had a proper truss been employed before he resumed his more laborious occupation, that no protrusion would have ever recurred; and that in a year he might have left off the use of a truss altogether; which, under the present circumstances, it will not be safe for him to attempt.

OBSERVATIONS ON ABDOMINAL TUMORS AND INTUMESCENCE: ILLUSTRATED BY CASES OF DISEASED LIVER. By R. BRIGHT, M. D. F. R. S. &c.

In following out the subject of abdominal tumors, Dr. Bright draws, in the present Paper, his illustrations from the *Liver*.

In seeking, says our author, to render our diagnosis as correct as possible, in any case of hepatic disease, we are necessarily led to attempt to discover the size and form of the affected organ; a task, in many cases difficult, if not impossible; and sometimes, when performed, liable to lead us astray, unless we carefully take many other circumstances into consideration; but at other times affording us the most important information towards the discovery of disease.

One of the chief sources of difficulty, in ascertaining the size and form of the liver, depends upon the situation of the organ: for it is so placed, with regard to the ribs and the diaphragm, that, in its most perfect state of health, it is almost as much concealed from the sight, and removed from the touch, as the

contents of the cranium. Another difficulty arises from the liver being liable to displacement, from causes independent of disease within itself; as from occasional, though not very frequent deviations from its natural position, and from pressure exerted upon it by effusions within the right cavity of the chest, or from tumors between the liver and the diaphragm. And a third source of difficulty is found in the induration and enlargement of neighbouring organs; as of the right kidney, the stomach, the omentum, and the colon. Still in most cases we can arrive at a very satisfactory knowledge of the size and form of the liver, when it deviates at all considerably from its normal state.

Dr. Bright observes, in reference to the natural site of the viscus,—The large right lobe of the liver, in its healthy state, lies completely in the hollow formed by the diaphragm, not descending below the margin of the ribs, and extending upwards to between the sixth and seventh ribs on the right side. The left lobe usually extends to the soft space below the ensiform cartilage, a short way into the left hypochondriac region; and a portion of its lower margin is thus seen lying across the scrobiculus cordis when the body is opened, and is frequently the only part of the organ which is visible.

As a necessary consequence, he goes on to remark, of this situation, the healthy liver influences very little the sound produced by percussion on the soft part of the abdomen; which, if all the organs are free, healthy, and empty, is usually clear and sonorous, from immediately below the margin of the ribs, to the very lowest part of the pubic region. If, then, the sound in any part be dull, it is our business to ascertain the extent and connection of such unnatural sound; and in this way, if we can trace an uninterrupted dulness to the margin of the ribs on the right side, our suspicions may fairly be excited, and the liver is the origin of the disease. The more perfect and the more practised the ear, the more likelihood there is of tracing the deviations of sound from their natural clearness: but in some cases of very extensive disease, where the liver or other organs are irregularly enlarged or tuberculated, the investigation is most difficult. Yet still, Dr. Bright thinks the touch more fallible than the ear, in cases of extensive tubercular or fungoid deposit in the abdomen. We must never suffer ourselves to be led into the error of denying the existence of hepatic tumor because the dulness or the hardness are so extensive that they appear to reach beyond the probable bounds of the liver; for, in fact, there is no tumor, of which the abdomen will, admit, so large that it may not be an enlarged liver: and if we can satisfactorily trace the continuity of the dull sound, or the hardness under the ribs of the right side, while no other obvious indication leads us to ascribe it to another organ, we may legitimately consider the liver as the seat of the disease. But after all, we shall not be always right.

It would be an error to suppose the rapidity with which the tumor has appeared to be inconsistent with the idea that it can have originated from the liver; for we find tumors of the most extraordinary extent generated in the liver in a few weeks:—nor are these always attended with such remarkable pain as might be expected under such rapid distention of structure.

The general symptoms or condition afford valuable assistance.

Disease of the liver seldom exists long without producing a peculiar appearance in the countenance of the patient. In some cases, as we shall see, actual jaundice, and that of the most decided character, accompanies hepatic tumors; but many of the more formidable conditions of the liver are indeed, but slightly marked by this symptom. Still, the approach to the jaundiced state, the sallow cheek and temples, and the lightly-tinged conjunctiva, are most often present when disease has greatly altered the structure of the liver, or gone on to the formation of tumor. To this, however, there are remarkable exceptions; so that the absence of the symptoms should never lead us to repudiate the idea of hepatic disease. Fungoid growths to a very considerable extent may occupy the liver, and yet no jaundice, and no approach to it may be present. Fatty

intumescence of the liver has often been recognised by a peculiar marbly appearance of the skin that it gives birth to.

2. Gradual or rapid emaciation, with a peculiar cachectic aspect, frequently accompanies disease of the liver; though even this is far from constant; for there are certain forms of disease in which the liver is enlarged, and which are marked rather by an increased deposit of fat in the cellular membrane of the body, and in the omentum and mesentery, than by emaciation. The state of the bowels and the stomach greatly assists our diagnosis. Hæmorrhages taking place from the stomach and intestinal canal, and effusion of serum into the cavity of the abdomen, are amongst the symptoms which call our attention to the condition of the liver, and often strengthen our diagnosis.

The tumors depending upon the liver vary greatly in the extent they occupy, as also in their characters: sometimes descending scarcely below the margin of the ribs, and sometimes encroaching upon the pelvis. They are sometimes smooth and even; sometimes lobulated, with greater or smaller inequalities on the surface; sometimes soft and yielding; sometimes hard.

Dr. Bright, before entering on the consideration of hepatic tumors themselves points out the growths or morbid affections most apt to be confounded with them.

1. *Accumulations in the Colon*.—Amongst, says Dr. Bright, the many sources of such mistakes, by which physicians may be misled, and induced to conclude that the liver is the seat of disease when in fact it is not, feculent accumulations in the colon are perhaps the most frequent; and they lead to a deception the more complete, because they occasionally imitate, in the most striking manner, enlargements of this and other organs, and appear to afford a decided and tangible evidence of disease such as few can withstand, even to afford time for making trial of remedies, which, by acting freely on the bowels, might at once shew the cause, and remove the tumor. Dr. Bright relates the particulars of four which have occurred under his own observation.

The *first* case was one of accumulation of fæces in the sigmoid flexure of the colon, imitating organic tumor.

The *second* case was one of fæcal accumulation in the colon, imitating hepatic enlargement.

The *third* case—fæcal accumulation in the colon, imitating fungoid tumor.

The *fourth* case—fæcal accumulation in the colon, imitating malignant disease of the liver.

We must content ourselves with quoting the fourth case, one as much in point as any.

“*CASE 4.—Fæcal Accumulation in the Colon, imitating Malignant Disease of the Liver.*”

A. B., a seafaring man, aged about 55, was admitted into Guy's Hospital, under my care, with a hard lobulated tumor, about midway between the point of the ensiform cartilage and the umbilicus, in which he suffered considerable pain, both from pressure and without it. His complexion was sallow: his bowels stated to be freely opened. After careful examination, I had very little doubt that the tumor was organic, and connected with the left lobe of the liver; nor did the effect of remedies, or the appearance of the patient, at all undeceive me for some weeks; but I presently began to suspect that the pains, of which he made such frequent complaint, were rather of a spasmodic character, and such as indicated some detention of fæces in the intestine. I therefore put him on a more decided plan of purging than at first, though the bowels had never been neglected. He now took repeated doses of compound extract of colocynth, galbanum pill, blue pill, and small quantities of muriate of morphia. The effect was, after a few days, to bring away a quantity of hardened balls of

faeces; and in proportion, to diminish the supposed malignant tumor, till both pain and morbid growth, and every other symptom of disease, had disappeared."

Dr. Bright would be inclined to say, that, whenever an abdominal tumor occurs, in what may be considered the course of the colon, we should be very guarded in our diagnosis: and yet this will hardly cover all the possible cases of deception; for the colon is itself, of all the viscera of the abdomen, that which varies most in its course; so that scarcely a month passes in which we have not an opportunity of witnessing some variation:—as an illustration of which, he refers to three instances which he saw within ten days of each other. In one, the arch of the colon suddenly descended below the umbilicus; in another, the sigmoid flexure advanced beyond the same point; and in the third, the sigmoid flexure performed two complete convolutions, the least of which ascended to the duodenum where it commences in the stomach, and then descended to the pelvis.

2. *Disease of the Kidney*, frequently occasions difficulty of diagnosis. For though it seldom enlarges in such a way as to push the right lobe of the liver before it, yet it often presents itself as a tumor, proceeding from the under surface of the right lobe: and as it has sometimes attained a considerable size before it has been detected, it has been supposed to be continuous with the liver, and a growth from its substance.

3. *Disease of the Stomach*.—Disease of the stomach might be mistaken for tumor of the liver, particularly of the left lobe: but this will not often occur. The small curvature, when scirrhus, and particularly when fixed by disease to the liver, resembles greatly hepatic tumor. A malignant tuber in the stomach likewise, or a malignant thickening of the whole of that organ, may at first sight deceive; but strict examination, particularly by percussion, will demonstrate the cavity beneath, and shew that the disease is situated in a hollow viscus. In general, the pain referred to the stomach, and increased or excited by eating, the frequent nausea or vomiting, the marked emaciation, and the absence of the more remarkable symptoms of hepatic disease, will enable us to determine that the tumor belongs rather to the stomach than the liver.

4. *Morbid Growths of the Omentum or Peritoneum* may assume a very near resemblance to the liver studded with tubera or enlarged by disease: in most cases there will be found an obvious separation between the tumor and the liver, and a space where the colon or the stomach emits a clear sound on percussion; and the hard portions in the enlarged abdomen will be separated in a manner which will prove that they are not connected with the liver: there will likewise be an absence of many of the symptoms of hepatic disease. Dr. Bright, however, introduces one case for the purpose of shewing the difficulties that may be experienced.

CASE.—*Malignant Disease of the Peritoneum, resembling Hepatic Tumor*.—On the 22d of November, 1830, Dr. B. was requested by Mr. Fernandez, to see a shoemaker, aged 44. The account obtained was, that about a year ago he first felt a small lump below the ensiform cartilage; and the hardness seemed to increase across the stomach at the upper part, gradually extending downwards, to the present state: for some months he had occasionally vomited his food; and for the last six weeks this had happened constantly, about half an hour after eating, without pain or difficulty: though the nurse said that what he vomited was of a dark color, having both the appearance and smell of faecal matter. The stools were dark. His countenance pallid, but not sallow; and he had never had any thing approaching to jaundice. On examining the abdomen,

there were two or three projecting lumps, of the size and nearly the shape of half an egg, near to the scrobiculous cordis; and the whole upper part of the abdomen presented one uniform hard substance, almost as firm as cartilage, giving a general and equal fulness with the abdomen: this hardened condition extended almost to the pelvis, where there was a distinct lobulated margin to be traced, in the form of the lower margin of the liver: this descended lowest on the right side, but also was low on the left, where one or two lumps were to be felt, like independent tubers separated from the general mass. Increasing exhaustion took place, and on the 9th of December, the man died. On the 11th the body was examined.

On removing the external integuments and muscles, the peritoneum remained thickened to near a quarter of an inch, in some parts: and when this was thrown back, a large mass, very firm, and nearly the colour of fat, presented itself, descending into the pelvis, and there assuming the form of the liver, with a division between its lobes. This mass extended upwards, so as to push the diaphragm before it, and assume nearly the form of that muscle, in expiration. Raising this mass from below, the intestines came into sight, pushed chiefly to the left side, and covered with rounded masses of a semi-gelatinous form and appearance, assuming quite the disposition of fungoid disease: sprouting up, and growing in botryoidal forms, and giving an indistinct vesicular appearance, when cut through. Many of these fungous masses were arranged near the point where the mesentery joins the intestine; and some were quite pendent by threads not less than half an inch; and some had three or four such threads supporting them, apparently vessels. Many were seated upon the mesentery, or on the intestine. A large mass had formed between the rectum and bladder.

On examining more carefully the large mass which filled the greater part of the abdomen, it was found to be almost entirely formed of the adventitious structure, and the liver and stomach were both included in its substance; the liver not greatly altered in its colour or texture, but dwindled in size; and the stomach greatly contracted, and rendered quite irregular through its whole internal surface, so that the cavity bore no resemblance to the natural form or appearance. This mass likewise descended to the kidneys, which were partially imbedded in it. It could be raised from its lower margin like an enlarged liver, and then the intestines were displayed; but the fungous granulations from the different parts had produced some adhesion. The texture of this mass was quite vesicular; and though it seemed formed of numerous cysts, of almost equal size, not larger than sweet-peas, so that great part of it presented a rather uniform texture, it was evident that it assumed, in some of its loose and less-restrained portions, the structure which Dr. Hodgkin has ascribed to malignant growths; and in many of the cavities a gelatinous matter had collected, as in the ovarian dropsy.

The lungs were healthy, but there were several little transparent fungoid bodies on the pleura. The peritoneum covering the liver was greatly thickened by the same morbid growth, and adhered to the viscus.

4. *Displacement of the Liver by Disease in the right side of the Chest.*—It frequently happens that extensive effusion, or consolidation of the lung, either from pneumonia or malignant disease, depresses the liver so much as to render the sound of the right hypochondrium most remarkably dull for several inches below the ribs; and then it is by no means uncommon to find the medical attendant fully convinced that the liver is enlarged;—and probably now, if not before, he is induced to doubt whether the previous inflammatory attack did not belong to the liver, rather than to the lung or pleura.

Dr. Bright relates two cases illustrative of this remark. They present, however, no feature of particular importance.

In the next case, the liver was pushed down by effusion between it and the diaphragm.

CASE.—Abscess situated between the Diaphragm and the Liver, producing apparent Enlargement of the Liver.

August 6, 1834.—A boy was admitted into Luke's Ward, under the care of Dr. Back, labouring under bronchitis. He became rather suddenly the subject of a very large swelling in the situation of the right lobe of the liver, but passing over in a cushion-like tumor, towards the left side. No hepatic symptoms presented themselves. It was leeches, and other remedies employed; and at a time when it seemed to threaten great mischief, it rather suddenly diminished to a great extent: and then it very naturally became a question, whether this had been a highly-congested state of the liver from the bronchitis, or whether it might have been feces in the colon, or whether some abscess in the liver had found means to discharge itself. The relief obtained was very temporary; and on the 11th of August he died.

Section Cadaveris.—The lungs bore decided marks of bronchitis and of pneumonia: the right lung was adherent to the diaphragm. A large abscess was situated between the diaphragm and the liver, pressing down the latter. Its parietes completely insulated it from the general peritoneal cavity; but it had so compressed the right lobe of the liver, as to produce the complete appearance of an excavation in that organ, as an empyema seems to scoop out the lung with which it lies in contact. The surface of the liver, however, was not broken; so that there was no trace of bile in the abscess.

5. *Malposition of the Liver, &c.*—"The deviations," says Dr. Bright, "from the natural position of liver, with which I have met, have been very few; but where they do occur, they must necessarily present difficulties in diagnosis, scarcely to be overcome. I have never been present at the examination of a body in which the organ was transposed; but I have seen the left lobe so much elongated and enlarged, without any disease in the structure, as to vie with the right in size; and in other cases, to extend across to the left hypochondrium, reaching quite to the spleen. I have also seen, in one case, the liver placed behind several coils of intestine: so that whatever had been its size or extent, percussion would have yielded a clear sound."

CASE.—Small Intestines situated anteriorly to the Liver.

Mr. Bushfield aged 50, with sallow complexion, had consulted Dr. Bright frequently, in the last two years, for a loathing of food, and a sense of sickness of stomach without vomiting. Bowels costive, but he suffered much from the action of purgatives. He spoke of pain at the scrobiculus cordis, running back to the spine, and up the centre of the chest. He obviously became emaciated; and his symptoms were altogether such, that Dr. B. suspected some malignant disease. In the last year of his life, he had plainly phthisis pulmonalis.

In March, 1835, he died, and the body was examined. In the apex of each lung were old phthisical cavities, and some tubercles in other parts. The heart healthy, but small and flaccid. Towards the pyloric extremity of the stomach were two or three small round ulcers. Pylorus healthy: duodenum granulated. There were several ulcers in the ileum, particularly near the valve, and also in the colon. The mesenteric glands, near the ulcers, slightly enlarged: liver healthy: pancreas congested: spleen twice its natural size: kidneys healthy, but discoloured by congestion.

Such was the condition of the several organs; but the most remarkable circumstance was, the relative position of the abdominal viscera, when the abdomen was laid open. Neither the liver nor the colon presented itself to view;

but in their stead, the convolutions of the small intestines, which were found to have come completely in front of the liver; the colon and the omentum doubling over the liver, and pressing it back, so as to have made deep furrows in its anterior surface.

6. *Disease of the left Lobe of the Liver.*—Dr. Bright has seen great difficulty arise when the left lobe of the liver alone has been involved in disease, or where the disease of that lobe has been greatly disproportioned to the disease of the right lobe: of which the following case furnishes a good example.

CASE.—Malignant Tumor, confined entirely to the Left Lobe of the Liver, and ascending towards the Thorax.

Ann Cook, aged 59, a widow, admitted into Guy's Hospital, Nov. 6, 1839 Six weeks back, she had been wet through; and was attacked with rigors, flushes of heat and great thirst, with pain in the left side, which she says had existed in a less degree for some time before. This pain was aggravated by cough and deep inspiration.

At the time of her admission, her countenance was expressive of much suffering; and she complained of great pain in the left side, near the angle of the ribs. In the left hypochondriac region, just below the margin of the false ribs, there was a tumor of the size of a large fist, very tender on pressure, and protruding in a very obvious degree, the lower ribs. Tongue brown and dry: urine passed in moderate quantities, depositing the purpurates, and not coagulable by heat.

The right side of the chest, anteriorly, yielded a clear sound on percussion, and the respiration was natural. On the left side, anteriorly, it was dull on percussion, as high up as between the second and third ribs, and no respiration was heard: posteriorly, it was dull on percussion, the respiration tubular, and there was bronchophony. The sounds of the heart heard more to the right of the sternum.—She died in ten days.

Dissection.—On opening the chest, the diaphragm was noticed to be pushed up by the liver, as far as the third rib on the left side; but on the right, only as far as the sixth. The left lung was pushed up very high, as far as the seventh rib; but there was a small portion which was situated lower down, posteriorly, and which appeared much compressed: they were otherwise healthy.

The heart was pushed up, and more to the right side than natural.

Abdomen.—On opening this cavity, a large tumor presented itself: this was situated in the left hypochondriac region, and originated within the left lobe of the liver, which pushed the stomach to the right side. The tumor within the liver was of the size of an adult's head, and of a rounded form: its external surface was firmly adherent to portions of the lower surface of the diaphragm, and posteriorly to the spleen and kidney. On cutting into the tumor, it was found to be of a fungoid nature (*fungus hæmatodes*), originating within the structure of the left lobe of the liver internally.

7. *Other Sources of Difficulty.*—"Besides the difficulties which have already been enumerated, as opposed to unerring diagnosis, we must not omit to mention, that the spleen, when diseased, has occasionally been mistaken for the liver, and the liver for the spleen:—errors into which we may easily fall, when the left lobe of the liver is particularly affected, or is supposed to be so: nor is it an unusual thing to find both liver and spleen enlarged at the same time. It must likewise not be forgotten, that ovarian tumors, encroaching in their progress upon the right hypochondrium, and on the upper portions of the abdomen, have not only by careless and ignorant men, but by the skilful, been pronounced hepatic."

ENLARGEMENTS OF THE LIVER ITSELF.

To these Dr. Bright now proceeds. He adopts the division into the smooth and the irregular forms of tumor.

In the first of these diseases may be included enlargement from the passive congestion of blood—from acute or sub-acute inflammation; from retention of bile: from chronic hypertrophy; from fatty changes with intumescence: and from diffused malignant disease.

In the second division—tumor of irregular form—may be included, abscess, both acute and chronic; hydatids; the result of chronic inflammation, producing irregular contractions in the cellular membrane of the liver and permanent roughness of its surface; malignant disease in the several varieties of the scirrhous cerebriform, and melanotic deposits.

1. *Smooth Tumor or Tumefaction of the Liver from Sanguineous Congestion.*—“The most simple form, says Dr. Bright, “of hepatic enlargement is that which results from sanguineous congestion, where the increase in size is entirely owing to the unnaturally distended condition of the blood-vessels. This form of disease is by no means unfrequent in its less aggravated degree, apparently connected with loaded bowels making pressure upon the returning veins; and probably, with the deficiency and sluggishness of the peristaltic action of the intestines, encouraging delay in the circulation of the blood; which again, when once collected in the liver, proves an additional impediment to the onward progress of the stream. When the liver is thus loaded with blood, it gives rise to many of those ailments which are variously denominated dyspeptic or hypochondriacal, interfering with the digestion, and oppressing the nervous energies of the whole system, and sometimes mechanically impeding the action both of the heart and lungs.—A slight fulness is perceptible on the right side, and the ribs are a little raised. To the hand, the space below the ribs is more resisting, and even hard; and although there is no defined tumor, the edge of which admits of being traced, the dull sound which is elicited by percussion an inch or two below the margin of the ribs contrasts strongly with the clear sound of the hollow viscera which ought to occupy that space.

The enlargement from sanguineous congestion in the limited degree of which I have spoken, may be difficult to ascertain; but there is a degree of congestion betraying itself most manifestly by the enlargement of the organ, which descends several inches below the ribs, and may be felt as a hard full cushion with a defined margin, sometimes on a level with, and sometimes below the umbilicus. In cases of this kind, besides the defined character of the tumor, we have usually a peculiar sallowness of the complexion, which more especially directs our attention to the liver; and that sometimes to such a degree, that experienced physicians have been led away entirely from the primary disease on which the hepatic congestion depended, which is generally some obstruction of the circulation in the heart: and I have known, in this way, a patient supposed to sink under hepatic disease, while ossified valves, and enlarged and distended heart, have been the true cause of all the symptoms. In such cases, it is true that the liver, from being simply gorged, becomes gradually disorganized, passing from the nutmeg liver of distention to the permanent yellow and red liver, in which probably some adventitious deposit or some permanent change of character has taken place; but this is most decidedly a consequence of previous appreciable disease in another organ.”

We would point attention to the latter observation, as practical as true. It was only the other day that we witnessed a case of this description. The liver was much enlarged from congestion, and had diverted attention altogether from the condition of the heart which was greatly dilated, with attenuation of its parietes and adherent pericardium.

Dr. Bright relates a case of *Liver enlarged, and altered in its Structure from frequent congestion*, which, however, we need not go into.

2. *Intumescence of the Liver, from Inflammation.*—"It is to be presumed," says our able author, "that in most cases of inflammatory action the bulk of the liver is more or less augmented, in the early stages at least. But it often happens, that the evidence of inflammatory action exists in the pulse, the skin, the tongue, and the altered secretions both from the bowels and the kidneys; and yet no very decided fulness is perceptible in the right hypochondrium: but more frequently we find, on passing the flat hand gently over the part, that it experiences a little more resistance, and a little more sense of fulness, as it arrives at the right side: and on careful examination with the points of the fingers, we discover the margin of the liver descending from one to two inches below the cartilages of the ribs; and, on applying percussion, the sound is dull over a corresponding space. Sometimes the part is so tender, that these investigations can scarcely be borne; while, at other times, the patient complains little at the moment pressure is made, but suffers considerably from aching pain in the part for some time afterwards. The tumor thus produced is somewhat resisting, but not indurated; and it gradually subsides, as the general symptoms of inflammation are subdued. Leeches and the assiduous application of poultices, are the local remedies indicated: while bleeding from the arm, mercury with or without opiates, and antimonials, together with free action on the bowels, are the constitutional remedies, which can scarcely be safely dispensed with, where so important an organ, and one so apt to run into suppuration, is inflamed."

Dr. Bright relates no cases of this form of hepatic enlargement. He thinks it more frequent where hepatic inflammation tends to suppuration and the formation of abscess, than when it leads to simple jaundice.

3. *Intumescence of the Liver from accumulation of Bile.*—"A third form of smooth enlargement of the liver is produced by the bile being retained, so that it accumulates in the biliary ducts. In such cases, the liver gradually enlarges; and may be felt as a tense smooth tumor, descending toward the umbilicus, and proceeding onwards almost to the pelvis, while it nearly fills the right lumbar space. Pressure is productive of some pain, which often lasts for many minutes. In such cases, we are usually directed in our diagnosis by the very decidedly yellow suffusion of the skin; and in many cases, by a peculiar rounded tumor projecting from the lower margin of the liver. This will, however, depend upon the cause of the detention of bile in the liver. I believe that it very rarely, or perhaps never happens, that the liver is greatly gorged with its own secretion, unless some decided mechanical obstruction exists. When sanguineous distention takes place to a considerable degree, the bile is certainly more or less retained in the small tubes, and produces a jaundiced tinge on the skin: but here the obstruction is only partial, and is not fixed; and the degree of bilious congestion, compared with the sanguineous, is but small.

The circumstances under which I have seen the liver decidedly loaded with bile to distention, so that the bulk of the organ has been enlarged, and manifest swelling produced, have been tumors, or morbid deposits, pressing on the large excretory ducts, or biliary concretions impacted within them. If the obstruction thus produced occur in the hepatic duct, the tumor of the liver takes place, and the organ is distinctly to be traced gradually descending from the margin of the ribs, towards the pubic and the iliac regions, presenting a smooth and even surface. The whole, dull on percussion; and this dullness ascending to the sixth and fifth ribs of the right side. If the obstruction be lower down, occupying the common duct, the same enlargement of the liver takes place; but gradually we perceive the margin of the liver deviating from its even line, and a globular projection protruding itself downwards, of the size of a small egg. This pro-

jecting portion of the tumor yields, on pressure, the elastic feel of a deep-seated fluid: it increases, and becomes more tense, and often seems to project above an inch beyond the distended line; in which case it descends almost to the pelvis, being generally situated somewhat to the right of the mesial line, and on a level with the crest of the ilium. This tumor is the distended gall-bladder. In both these cases, the surface of the body is of a deep yellow colour; but I have suspected that it has not been so deep when the obstruction has been in the hepatic as when in the common duct; of this, however, I am by no means confident; but if it be so, the difference must arise from the change which takes place in the bile after it gets into the gall-bladder, to which, when the obstruction is higher up than the entrance of the cystic duct, it of course never gains access."

Dr. Bright relates an interesting case of *Tumefaction of the Liver from Retention of the Bile*, and then presents us with another, which is short and to the point, and we therefore quote it.

CASE.—*Tumefaction of the Liver from Retention of Bile—the Gall-bladder distended with its own Secretion.*

In the Spring of this year, Dr. B. was requested by Mr. Holding to see Mrs. T—, the subject of jaundice; but the more immediate object of our consultation was a tumor which had been discovered in the abdomen, and respecting which some diversity of opinion had arisen; though Mr. Holding himself had no doubt as to its nature.

The patient was an elderly lady, between sixty and seventy years of age, who had been affected with jaundice for several weeks. The colour was a deep yellow; the stools were white, or occasionally of a pinkish-white or drab. The urine very high-coloured, yellow, and loaded with lithic deposit. On examining the abdomen by the hand, and by gentle percussion, the liver was traced, of a large volume, going back towards the loins, and descending to the umbilicus. It was smooth and tense, but not hard; and, following its margin towards the right side, and between the umbilicus and the crest of the ilium, a large rounded projection was to be plainly traced; which, in connection with the other symptoms, Dr. Bright had no hesitation in pronouncing it to be the fundus of the gall-bladder. The symptoms by which the disease was chiefly marked, besides those already noticed, were anorexia, flatulency to the utmost degree, occasional vomiting, and considerable depression of spirits. Pressure made upon the liver was not immediately very painful, but left a wearing pain for some time after an examination.

No permanent advantage was obtained from remedies, and, at length, the patient sank.

Dissection.—On opening the abdomen, the liver was seen descending below the ribs, and gall-bladder projecting from beneath it. The gall-bladder was not of dark colour; but was so thin, from long distention, that, while trying to raise it, it burst, and a large quantity of light dirty-yellow glairy fluid escaped. It was therefore obvious that the distention of the gall-bladder depended on something else besides pressure on the common duct; and it was presently found that a biliary calculus was impacted in the cystic duct, so that nothing could obtain an entry into the bladder, except its own secretion;—but this would not account for the jaundice: however, this was also soon accounted for, by the entire obstruction of the common duct by induration of the head of the pancreas.

Dr. Bright remarks:—"One practical point is suggested by the examination in this case. I refer to the caution inculcated by the state of attenuation to which the gall-bladder was reduced. It actually gave way under manipulation; and the same might have happened during life; in which case, peritoneal inflammation would have been almost infallible. And this struck me the more, because I had several times, during my attendance, taken the tumor in my hand, and made gentle pressure upon it as upon an elastic bottle; observing, that if I dared

to make bold pressure, it felt as if I might possibly overcome the obstruction to the duct."

Two other cases of distention of the gall-bladder are related ; and the observation is made that, occasionally the gall-bladder loaded with calculi is brought into a state of suppuration ; and in this way, adhering to the parietes, forms an external abscess, and the calculi are discharged. In this case a tumor generally presents itself near the margin of the ribs.

4. *Hepatic Tumor from Chronic Hypertrophy of the Organ.*—"There is a state of disease," says Dr Bright, "into which the liver is very apt to pass, when it has been long over-stimulated by habits of intemperance. The whole structure becomes uniformly changed, so that the appearance it presents is that of a yellow granular substance, like a coarse-grained sandstone ; and at one period of the disease the whole organ is greatly enlarged. Whether it sometimes contracts in a later period, I am not quite sure ; but if it does, it then passes into a state approaching to the hob-nailed liver : at all events, at the period of which I speak, it forms a large hepatic tumor, of a smooth character ; for the graules of which it is composed are not perceptible through the parietes, which are usually, in this form of disease, rather loaded with fat, than reduced by emaciation."

Two cases are given of this affection. We proceed to—

5. *Hepatic Tumor from Fatty Degeneration of the Liver.*—"That very peculiar change to which the liver is subject when its whole substance seems converted into a mass of fat, supported in its form by the usual vessels and cellular membrane, has been known for many years, and has particularly attracted the attention of the French pathologists, who have traced it as connected in many cases with the phthisical diathesis more or less developed. I am not aware, however, that any one had pointed out a diagnostic mark of its existence during life, till Dr. Addison took up the subject, in a communication to these Reports. And to this I must refer ; as I introduce the disease in this place only as affording one instance of hepatic tumor ; which, however, is not a constant attendant on the disease in its early stages."

We are presented with three cases of the fatty liver. We shall select one.

CASE.—Fatty Change in the Substance of the Liver.

A young lady, aged 17, was in apparent excellent florid health in November 1839 ; except as regarded the catamenia, which came at twelve years of age, and were never regular, being frequently absent for six months at a time ; but it was observed that she had grown remarkably stout. In November, she first began to feel pain in the bowels, particularly about the right iliac region. In January she went to Brighton, on account of a disease which had taken place in the first phalanx of the great toe ; and while there, diarrhœa came on to such a degree, that for twelve weeks she never had less than six or eight stools in the day ; and she generally experienced a little pain in the right iliac region, and some griping over the whole abdomen.

Dr. B. first saw her on the 17th of July. She was much emaciated, yet the abdomen was not so much so as the rest of the body. Dr. B. could feel what appeared a glandular body, low down in the right iliac region, probably near the head of the colon.—Tongue red, with some elongated papillæ : stomach so irritable, that she vomited almost all her food : pulse, from 100 to 120. He saw six stools which had been passed that morning ; most of them were of a remarkably healthy, brown, feculent appearance ; scanty, loose, but not watery, with some small lumps in them ; and one or two, *might* be the treacle-like tinge, which a slight admixture of blood sometimes presents. Dr. B. made trial, in addition to the many remedies which had been already used without success, of small doses—first, of sulphate of copper ; then of chalybeates com.

bined with astringents: but the good effects produced were very temporary: and although at one time, on a diet of mixed food not prescribed by her medical adviser, she appeared to lose in a remarkable degree the irritability both of her bowels and her stomach, so that for two days she had neither vomiting nor diarrhœa, yet this apparent improvement passed off; and the diarrhœa returning with increased violence, she died the last day of August.

Dissection.—On laying open the abdomen, the omentum was seen, by no means destitute of fatty matter, spread over the abdomen, and attached at one part in the right iliac region. The liver came at once into view, of a yellow drab colour, and much enlarged. It descended at least three inches below the cartilages of the ribs, and across the whole scrobiculus cordis, quite to the spleen on the left side: it ascended to the interval between the third and fourth rib on the right side, and occupied a considerable space in the left hypochondrium. It was a perfect specimen, throughout, of the advanced fatty liver. The scalpel was covered with grease; a portion, on applying heat, yielded drops of fat, and made an oily stain on linen; and a piece of the liver, thrown into water, floated readily. A considerable quantity of blood flowed from the incisions of the liver. The gall-bladder contained about two drachms of healthy bile, and a gall-stone, of the size of a small filbert, of crystalline cholesterine.

The Intestines.—The whole peritoneal covering perfectly healthy, smooth, shining, and free from any effusion; but on following out the course of the intestines, they came, in the last two or three feet of the ileum, to some dark discoloured spots, where the bowel was contracted, evidently corresponding with internal ulceration; and on arriving at the termination of the ileum in the cœcum, the intestine formed a mass of the size of an egg, in which the vermiform appendage was glued with a portion of the omentum to the cœcum. On laying open the intestines, they found about ten separate ulcers in the lower part of the ileum, some of which embraced the whole calibre of the tube; but the chief ravage was about the ileo-colic valve, which was envolved in a mass of ulceration, as was the pouch of the cœcum, and the cavity of the vermiform process. The other parts of the mucous membrane were healthy; and the whole lining membrane of the colon was perfect, except one small ulcer about the sigmoid flexure: and in the rectum the membrane was red, but not ulcerated. It was obvious that much tubercular deposit had taken place in the ulcerated patches, previous to their ulceration; for some such deposits lay around them, to which the ulcer had not extended.

The mesentery still contained some fat; and the glands were much enlarged, some of them going into a state of softening and supperation. One small tubercle was detected in the substance of the right kidney.

The lungs presented some traces of tuberculous matter.

Dr. Bright observes:—"In this case, there can be no doubt that percussion would have yielded a dull sound over an unusual extent of the upper part of the abdomen, as it did in the former case. Indeed, the similarity was so striking, that we ought almost to have inferred the nature of the hepatic enlargement. Such a diagnosis, however, should always be given with caution; although, in a case of decidedly irregular catamenia, with obstinate diarrhœa, and a large smooth tumefaction of the liver, the probability would be greatly in favour of this form of disease; and more particularly before the meridian of life, for I have more than once had reason to believe that the state of amenorrhœa was connected, either as cause or effect, with the existence of fatty liver. It may be a matter of surprise that I did not detect the disease by that state of skin pointed out by Dr. Addison; but in the distressing state in which the patient was, no striking peculiarity in this respect was observed."

6. *Malignant disease*, for the most part, induces tumors of the irregular form, yet it occasionally happens that it is otherwise, more particularly when the dis-

ease develops itself very generally through the structure of the organ, forming a great number of small and almost confluent tubera, and thus producing an even surface. Of this we have a sample.

CASE.—Malignant Disease producing a regular smooth Enlargement of the Liver.

April 13, 1834. Dr. Bright was requested to see Mrs. S., who had been delivered of a living and healthy child two days previously. The abdomen had scarcely diminished since parturition. On examination, a hard smooth tumor could be distinctly traced, occupying all the upper part of the abdomen; rendering the lower half of the right chest dull, and descending some way below the umbilicus. Although the situation of the tumor pretty plainly pointed it out as the liver: yet some who examined it, finding it pass quite over to the left side, had been inclined to think that the spleen was also involved in the disease. The uterus was also distinctly felt in the pelvis. The skin was sallow; there was no peritoneal tenderness. She continued to get lower, and died on the 10th of April.

Dissection.—About two quarts of yellow serum in the cavity of the abdomen. The lungs were pressed upward by the liver, which, in the recumbent posture, and with the lungs empty in death, had encroached on the chest, as high as the fourth rib. The liver, when the chest and abdomen were both laid open, occupied full half of both the cavities: it spread from one side to the other completely, and extended from the fourth rib to considerably below the umbilicus. It was diseased in almost every part; presenting, on its surface, circular white masses, which were not the least elevated, but rendered the whole mottled with white spots, varying from the size of a shilling to a pin's head, irregularly distributed, but occupying by far the larger proportion of the whole. The peritoneum itself was very little influenced. The gall-bladder contained a small quantity of green bile. Pancreas healthy. Spleen healthy, but large.

HEPATIC TUMORS OF IRREGULAR FORM.

The tumors of this class are, abscesses in the liver, in various conditions; some other results of chronic inflammation; hydatids; and the different forms of malignant disease.

HEPATIC TUMOR FROM ABSCESS.

When inflammatory affections of the liver have gone on to the formation of abscess, it depends entirely upon the situation in which the suppuration takes place, whether it produces a tumor externally or not. In general, however, some enlargement of the liver follows almost necessarily: and if the abscess does not point sufficiently, or if it be placed completely under the vault of the diaphragm, still it pushes the liver down, so that its margin is perceptible some way below the ribs: this produces an even smooth enlargement, rather than an irregular tumor; and usually the dulness of the right side of the chest extends higher than in health. When the abscess is so situated as to point externally, a distinct tumor is induced; sometimes protruding the ribs, and even pointing between the costal spaces; at other times appearing either immediately below the cartilages, or at some distance from them; the situation, of course, varying according as the right or left lobe is affected. A tumor arising from such a cause is easily to be traced as connected with the liver, of which it obviously forms a part; the dulness, on percussion, being continuous, as well as the resistance on pressure. The resistance, however, is not very great, as the whole organ rather gives way under pressure; and the sensation to the touch is comparatively soft, or it yields an elastic tenseness. More or less pain, and that often acute, is experienced when pressure is made; and generally symptoms of an active, febrile, and inflammatory character have preceded the appear-

ance of such a tumor. It must however be borne in mind, that the approach of an abscess in the liver is often so obscure, and so insidious, that the inflammatory symptoms have sometimes not been recognised; or have, if not overlooked, frequently been ascribed to other organs: so that the appearance of the tumor has first suggested the mischief which had been going on. Its progress, too, has often been insidious; and an abscess has become chronic, producing an enlargement of a still more striking kind than I have just spoken of, remaining for months as a tangible tumor, almost defying diagnosis; and at length destroying life, by wearing out the constitutional powers, or by some accidental effusion of the pus into the peritoneal cavity. Still further than this, however,—an abscess of the liver may produce an uneven lobulated condition of the liver, possibly by absorption of the pus; or, more probably, by the escape of the greater part of it through the gall-ducts, and a consolidating change of what remains, which becomes insulated in the thickened cellular membrane. What we then find, is, a deep cicatrix marked on the surface of the liver: and when we cut through this, a yellow deposit, of a more or less purulent character or of a chalky consistence, is lodged at the bottom. Such cicatrices are not matter of doubtful existence, but deep and tangible indentations on the surface of the liver; and though generally concealed from the touch by the ribs, yet if the liver were brought down below the ribs by its own enlargement or by external pressure, the nodulated liver would present a very perplexing variety of tumor, which would most likely be mistaken for malignant disease, till sufficient time had elapsed to prove its comparative innoxious nature, and its little disposition to increase.

Two cases are detailed, both interesting. We regret that we have only room for one, the more curious of them.

CASE.—Deep Cicatrices of the Liver from former Abscesses.

Dr. B. was requested to meet Dr. Budd and Mr. Bell, in the case of a gentleman sinking under the effects of granulated kidneys with albuminous urine. He had made several voyages to India in his youth; but had retired from that service above fourteen years. During his Indian voyages and residence, he was supposed to have suffered from liver disease: and he has always asserted that he was sure his liver was still diseased: one reason for which belief had been, his great tendency to dysenteric diarrhœa, and derangement of the bowels.

Dr. B. was present at the post-mortem examination: and the first thing which drew attention, was the singular appearance of the liver; which was divided by several deep fissures, some of them a full inch in depth, rendering the whole liver irregularly tuberculated. These fissures were the cicatrices of abscesses; and on cutting through them, we found at least twenty small deposits of puriform matter, contained in little cyst-like cavities formed by the induration of the cellular membrane of the liver; and some of these deposits, though apparently locked up in these cavities for several years—for there was no sign of recent action—still retained the character of most perfect recent pus.

As Dr. Bright observes, this case is instructive, as shewing the frequent termination of hepatic abscess, and the way in which the remaining portions of pus may become so insulated as to be productive of little or no inconvenience, locally, or on the system.

IRREGULAR SURFACE OF THE LIVER INDUCED BY CHRONIC INFLAMMATION.

“Under this head I would arrange the numerous cases in which, from contraction of the cellular membrane, the liver becomes deformed and lobulated, either in large proportion, or in that more uniform manner which marks the hobnailed liver. As in this form of disease the liver is generally contracted rather than enlarged, we are frequently deprived of an opportunity of ascer-

taining its state with certainty, though the general symptoms frequently lead us to correct diagnosis. These conditions of the liver are very apt to be marked by the effusion of blood into the stomach and intestines, leading to most severe and repeated hæmatemesis, as was very well pointed out by Dr. Law of Dublin; and also to serous effusion into the peritoneum. It is owing to this last circumstance that we are often led to search for the liver, and to detect it even when its bulk is rather diminished than increased; for as the ascitic patient lies on his back, if the liver be indurated and contracted, it tends to gravitate of its own accord, from its attachments; and thus, falling downwards and forwards, sinks, suspended under a certain quantity of the serum: and thus we find it below the margin of the ribs, so as to be plainly felt. For this purpose the attention of the patient must be drawn away, if possible, to prevent the almost involuntary tension of the muscles; and then, the points of the fingers being placed on the surface, by a quick movement are brought down with the integuments so as to displace the serum and receive the impulse of the liver; and then, taking advantage of a favourable moment, the irregularities of the surface may be felt. Thus I have before me cases where the abdomen is described as loaded with serum, and the liver to be distinctly felt below the ribs; and yet, when the examination was made, after death occurring in a few days, the liver is stated to be rather small, its whole surface granulated, and its texture hard and unyielding.

There are a few other cases of tumors, of a more casual kind, formed on the surface of the liver; as, cartilaginous deposits; and even bony tumors, the result of morbid actions, which are generally not progressive. The possible existence of such tumors should be carefully borne in mind, as pointing out the propriety of abstaining from the use of violent remedies for the removal of any internal tumor, whose stationary condition, and the little effect it produces on the constitution, seem to point it out as less likely to prove injurious than our efforts for its removal, which at length will probably be of no avail."

IRREGULAR TUMOR OF THE LIVER FROM MALIGNANT DISEASE.

Dr. Bright observes that the different forms of malignant disease must be considered amongst the most common sources of hepatic tumor. We frequently find the liver alone the seat of such disease; but, on the other hand, we still more frequently have instances of the successive or simultaneous attack of several organs. When the disease is confined to the liver, the situation of the tumor is most easily ascertained; for as there is no complexity of diseased organs, we are of course less liable to be led into error: but the nature of the disease is often more easily ascertained when other parts are affected; more particularly such as present facilities for external examination, as the mammæ, the uterus, or the superficial glands; which are all very frequently implicated, and being far removed from the liver, afford no room for confusion: and the very circumstance of the organ being involved, strengthens the probability of the malignant nature of the disease. On the contrary, however, the greatest sources of difficulty, as to the situation of the disease, occur when the right kidney, the ascending colon or its arch, the stomach, the pancreas, or the peritoneum, are involved in the same disease with the liver.

Malignant disease varies considerably in the forms it assumes; but in general, when developed in the liver, shews itself as rounded masses or tubera, approaching more or less to the spherical shape. Dr. B. regards the malignant growths as generally originating in the cellular membrane connecting the essential portions of the organs in which they are found; often, at first, merely displacing the structures which are employed in the proper function of the organ, and interfering therefore but little with its duties; but ultimately entering so minutely into these structures, as to effect an apparent conversion, or an obliteration of the whole. Three very distinct varieties present themselves;—cerebriform dis-

ease, and that running into fungus hæmatoides; the hard scirrhus; and the melanosis. Or perhaps the hæmatoid form of the disease might deserve a separate place: making, in that case, four varieties.

Of these, the cerebriiform, with or without the hæmatoid, is often the most rapid in its growth, and forms the largest and most distinct tumors in the liver: next to that, the melanosis; and the scirrhus, though apt to attack a great many points simultaneously, is the slowest in its progress, and often the least easy to recognise as a distinct irregular tumor.

Dr. Bright relates three cases of Cerebriiform Growths in the Liver, which we must pass by, contenting ourselves with only the following note of them:—*that* all three of the patients had been invalids, and suffering from abdominal pains for that length of time, and some with severe occasional aggravations; and in each, the attack which preceded death, and in which the hepatic tumor was first detected, was one of intense pain in the right hypochondriac region. They all died worn out by exhaustion and suffering.

The disease had, in each, shewn itself by tubera of considerable magnitude; and in two, had shewn a tendency to attack the glandular structures about the head of the pancreas and the pylorus: and had not in any case displayed itself by affections of the serous membranes, which we find very common in the most strictly scirrhus form of disease.

The next case is one of Tumor in the Abdomen, from Scirrhus Tubera in the Liver—Peritoneum and other Organs affected.

The next—Liver converted into a Scirrhus Mass, so contracted as to form no External Tumor.—Uterus scirrhus.

We introduce the next.

CASE.—*Scirrhus Tubera of the Liver.—Mamma and Ovaria diseased.*

Mary Read, aged 45, was admitted, under the care of Mr. Morgan, with scirrhus of the right mamma. She was unmarried, of sallow complexion, and spare habit. Ever since she can remember, even when young, she had a small hard tumor under the right nipple, occasionally accompanied by pain. Menstruation always regular, to the present time. Within the last three years the tumor has increased; with more pain in the part, and derangement of the general health. The breast very hard, moveable, and, in some parts, seems to contain fungoid cysts. There is manifest irregular hardness in the region of the liver; and therefore no operation was admissible.

She shortly became the subject both of ascites and anasarca, and died March 6th.

Sectio Cadaveris.—The liver was seen of great size, and universally pervaded by carcinomatous tubera, from the size of a grain of rice to that of a plover's egg. They all assumed a spherical shape, forming circular spots upon the surface, which, in most parts, touched each other, and in some, pressed each other out of shape, occupying a very large portion of the surface. The circular patches were of a whitish flesh colour, depressed towards the centre, and scarcely elevated at their circumferences, and marked with radiated vascularity, protruding from their centre. They were harder and more elastic than the surrounding liver; but could not be completely separated from it, as their edges, though defined to the eye, seemed to be not only strongly attached, but actually to amalgamate with the liver, as if the morbid deposit were insinuating itself between the acini. The liver itself was rather soft, of a light colour, and some parts stained with bile. The coats of the gall-bladder were about a quarter of an inch thick, somewhat resembling a scirrhus stomach, and very much contracted.

The left kidney had a fungoid growth upon its surface. In the left ovary was a well-marked apoplexy of a Graafian vesicle; in the right ovary, a fungoid growth. The lumbar glands partook of the malignant disease.

The two succeeding cases are samples of Melanosis—the first Large Irregular Tumor, from Melanosis of the Liver—the second, Melanosis occupying the Liver very extensively; very slight Jaundice before death.

We shall introduce the first.

CASE.—“December 14, 1839.—I was requested to see a lady affected with a great enlargement of the abdomen. She was a married woman, and had lain in fourteen months before, at which time the abdomen was not discovered to be diseased; nor was it till eight months ago that the tumor was detected. Within the last week effusion had taken place into the peritoneum. I found her greatly emaciated; her complexion scarcely sallow, certainly not jaundiced. She was as large as a woman near the full time of her pregnancy. On examination, I found a hard nodulated mass, extending quite to the pelvis, and pretty obviously continuous with the liver. The ribs on the left side rather raised, and percussion dull. Examining this extensive tumor as carefully as I was able, I could not satisfactorily account for one or two hardened masses situated in the left iliac region with the liver; and I therefore concluded that the disease had been communicated to the peritoneum or omentum. I entered in my note, that ‘I perceive one black spot, which I consider a small melanotic tuber, under the skin on the abdomen; and I suspect that the disease will be found of that character.’

The swelling increased. The œdema of the legs was so great, that the cuticle gave way. She was greatly emaciated; and sunk, exhausted, on the 11th of January: yet within forty-eight hours of her death she had been able to come down stairs and join her family.

Sectio Cadaveris.—On removing the parietes, and opening the chest, the liver was seen, as a black mass, extending from the fifth rib to the pelvis and into both lumbar regions. This was everywhere pervaded by melanosis; in some parts assuming rounded forms, but generally appearing to percolate between the acini, without attaining any fixed form, or being moulded by the cellular tissue in which it was deposited. Mingled with this black matter were many small tubera of a scirrhus character; and in one part of the convex surface a space of several inches had the appearance of a porphyritic granite, from the intermixture of the white and black. The gall-bladder contained but little bile: a few small melanotic glands on the mesocolon: the spleen and kidneys healthy. A few very small glands pervaded by melanosis were seen buried so deep in the integuments as not to shew themselves on the surface. One melanotic gland on the pericardium: one small one on the heart itself. There was decided melanotic deposit in the cancellated structure of the sternum, about its juncture with the first and second ribs.

The upper part of the lungs was spotted with melanosis, in round spots, not resembling the ordinary pulmonary blackness.”

The last case is an instance of—Extensive Malignant Disease, very rapidly implicating both the organs of the Chest and the Abdomen.

Dr. Bright concludes by observing,—

“The cases and observations which I have thus thrown together, may be considered as forming an outline of one very important class of abdominal tumors; and though many of them would seem to point out the difficulties of diagnosis, yet I trust, as a whole, they may rather serve as an assistance and an encouragement to our endeavors, in this essential pursuit.”

WILLS HOSPITAL, PHILADELPHIA.

REPORT OF CASES TREATED DURING THE MONTHS OF OCTOBER, NOVEMBER, AND DECEMBER, 1839. By ISAAC HAYS, M.D.*

1. *Inability from Partial Amaurosis to distinguish certain Colours.*

Dr. Hays relates the particulars of an interesting case, and makes it the vehicle of some equally interesting observations. We shall merely mention the leading feature of the case.

An unmarried girl aged 20, had suffered two attacks of cerebral disease, one in the spring of 1837 the other in the winter of 1837-38. After recovery from the first attack, objects for a time appeared to her double. The second attack left her entirely blind, in which condition she continued for four months. After this her sight began to return, and at the period of her admission in the hospital, in February, 1839, she was able to read large print. In May, she came under Dr. Hays's notice.

Whilst examining her at this time to ascertain the degree of vision she possessed, her reply to one of our questions led us to suspect that she was unable to distinguish colours. When asked whether she could see the figure in her dress, which was a calico one with red spots, she replied "Yes, I see the *brown* spots." Our attention thus directed to the subject, we soon ascertained that while she could distinguish forms, even of small size, with accuracy, her perception of colours was exceedingly imperfect. Repeated and careful investigations during this and on several subsequent occasions, satisfied us that the only colours which she knew with certainty were *yellow* and *blue*. Nearly all other colours she termed *brown*, or hesitated to name, designating, however, their shades or intensity of colour accurately. Thus a deep red she called a dark brown, a bright green a light brown, and a very pale pink a very light shade of brown.

We exhibited to her both by day and by candle light, a number of colours and have them now in our possession with the names she bestowed on them. With the exception of yellow and blue all the other colours were named with much hesitation, and some only after our insisting on her doing so, and she then manifestly named by guess.

The treatment adopted was that calculated to remove cerebral fulness; and, under this, her sight improved, and with it the ability to distinguish colours. By the end of October, we are told that she distinguishes all the primitive colours readily and names most of the secondary ones as correctly as could be expected from one of her moderate intelligence, with the exception of violet; this last she seems at a loss to name.

The remarks of Dr. Hays embody most of what is known upon the subject of the inability to distinguish colours. We think our readers will be well pleased if we quote them.

The feature, says Dr. Hays, of most interest in this case is the inability to distinguish colours. This is, we believe the first example hitherto recorded of this inability having resulted from disease, or been co-existent only with it. As a natural defect, the power of distinguishing forms being perfect, it is not rare. Several instances of this have come under our own observation, and not a few others have been mentioned by writers. Such of these last as have been recorded with sufficient details to furnish data for comparison, viewed in connexion with the case we have recorded, lead to conclusions which it may not be uninteresting to notice.

* American Journal, Medical Sciences, August, 1840.

1. As a natural defect, inability to distinguish colours may exist in different degrees.

2. In the worst degree, the individual is able merely to distinguish shades,—the perception of colour is entirely absent. Examples of this are afforded in the two Harris's, who could distinguish a striped riband from a plain one, but could not perceive the difference between any one colour and another, except as darker or lighter, and in Dr. Elliottson's second case.

3. In the next degree, the individual can distinguish only a single colour, and that colour is always yellow. Thus Dr. Butter states that Robert Tucker knew to a certainty *yellow* only ; and it appears that the boy whose case is recorded by Dr. Nicholl was in the same condition. Now it may be called to mind that Mary Bishop states when her sight improved the first colour she recognised was yellow.

It may be mentioned here, as connected with this subject, that we noticed a similar phenomenon in the case of a lady whom we attended for amaurosis in the winter of 1837-8. This patient, who was quite blind, began to recover her sight, and among the early evidences of improvement she mentioned, was her ability to distinguish shades of colour, as the stripes in a Venetian carpet ; she could not perceive, however, a single colour. When further improvement took place she stated that she could recognise the *yellow* colour of a large looking-glass frame. A relapse then took place, from which she has not since recovered.

4. We may consider as the next degree of this defect where the individual can recognise two colours only ; and these seem to be always *yellow* and *blue*. This is the most common grade of this defect. Examples of it are afforded in Scott, Dalton and his brother, in the case recorded by Dr. Nicholl in the *Med. Chirurg. Trans.* ix. 359 ; in that of J. B. related in the *Transactions of the Philosophical Society of Edinburgh*, vol. x. p. 253 ; James Milne, Mr. C., Mr. Troughton, and Dr. Elliottson's first case, and Sir David Brewster's case. Mr. Scott, J. B. and Mr. C. were imperfect in their recognition of blue ; in the other cases the perception of yellow and blue seemed complete.

It is remarkable that, whilst all the individuals who belong to this class of cases are able to discern yellow and blue, they cannot distinguish these colours when presented in a state of mixture. Green they do not know—they seem blind to it. They cannot perceive any difference in colour between a stick of red sealing wax and a green table-cover ; between the colour of the scarlet fruit of the Siberian-crab and the green of its leaves, &c. &c.

So it was with Mary Bishop ; whilst able to detect yellow and blue she could not see the difference in colour between the red roses and their green leaves. It was not until her eye had become sensible to red that she could distinguish green.

5. It seems probable that individuals who are able to recognize *accurately* the three primitive colours, can also distinguish the secondary ones. To future observations must, however, be left the decision of this question. But persons whose perception of red is imperfect do not accurately discriminate secondary colours.

As the imperfection in vision we have been noticing is a very curious one, it may be allowable here to call attention to some further facts connected with it.

If must be remarked that whilst those who labour under this defect naturally are unable to distinguish certain colours, though of the most vivid kind, they can discriminate any marked difference in *shades* or degrees of colour, and can see minute objects often with perfect distinctness. It occurs in persons whose point of vision is natural, as was the fact in most of the cases on record, and also in those who are far-sighted, as Mr. Nicholl's fourth case and Mr. Colquhoun's second case ; and in those who are near sighted, as in Mr. Dalton.

This defect appears often to be hereditary, or at least to prevail in certain

families. Thus Harris had two brothers who were unable to distinguish colours, while two other brothers and sisters, as well as his parents, had not this defect. Scott's father and one sister had the defect; his mother and another sister were free from it; but his mother's brother had it. The former sister had two sons, both labouring under the defect. Scott had two children who were able to distinguish colours. In Nicholl's first case the mother and father and his four sisters were free from this defect, but his mother's father had it. This last had two brothers and one sister; one brother had the defect, the others not. In Dr. Nicholls second case several of the family were similarly affected. Mr. Dalton had a brother who laboured under the defect, and he mentions that he knows of a family of six sons and one daughter, in which four of the sons were unable to distinguish colours. Tucker's maternal grandfather had this defect; Wardrop states that several branches of a noble family in Great Britain have been remarkable for having it; and we know of a family in this country similarly circumstanced.

We have often noticed that persons affected with cataract, who were unable to discern the *form* of objects, in consequence of the irregular refraction of some of the rays of light and the interception of others, could distinguish generally, very accurately, *colours*. Connecting this fact with the inability to perceive colours while forms could be discerned, as observed in Mary Bishop and some other cases of amaurosis, it occurred to us that we might derive from this a means of diagnosis between the two diseases. Subsequent investigations have not confirmed this idea. The subject may, however, be worthy of a more extensive examination than we have bestowed on it.

We fancy, it is hardly worth while to notice the theories that have been proposed to account for the phenomenon. The most probable is that which places the defect in the sensorium.

NEW YORK HOSPITAL.

SELECT SURGICAL CASES. Reported by GEORGE BUCK, M.D. Surgeon of the New York Hospital.*

We are glad to perceive that our contemporary of New York has devoted a distinct section to Hospital Reports. This is as it should be. If the medical officers of large hospitals, whether in this country or abroad, would publish at stated and regular periods the compressed results of their experience, what a mass of clinical wealth would be diffused throughout the medical world. We would take, however, the liberty of hinting that long cases spun out with diurnal details, and containing only facts that every body knows, are not the sort of hospital report that is wanted. Such disgust rather than attract, and are read neither by old nor young. Select cases and general results are, as it seems to us, what are required. But to the paper before us.

INJURIES OF THE HEAD.

1. *Condition of a Trephine-hole in the cranium, two years after the operation.*

A boatman, aged 22, was admitted Aug. 22, 1837, with compound fracture of the cranium with depression. On the fifth day after the injury, convulsions, chiefly of the left side, occurred, the trephine was applied, many pieces of bone

* New York Journ. of Medicine and Surgery, Oct. 1840.

removed, and the patient relieved. He recovered from the accident, and died two years afterwards of phthisis. The hole made by the trephine was now examined.

The shape of the opening was an irregular triangle with rounded angles, two inches and a half in its largest diameter, and two in its shortest. The external table of the bone was rounded off at the margin of the opening, and the internal, which extended beyond it, remained sharp at its edge, from which a strong tense membrane stretched across the opening and closed it up. This membrane was evidently composed of the pericranium and dura mater, which could be raised from their respective surfaces, and traced as far as the margin of the opening, where they closely adhered to each other ; its external surface was rough and shreddy from adhesions to the scalp ; the internal smooth and shining ; near the centre of the latter surface there was a circular depression of the size of a five cent. piece, with rounded edges, that appeared as though there had been a loss of substance in the dura mater. At this point the convolutions adhered by means of the arachnoid membrane, which was thickened. There were no bony deposits between the layers of the closing membrane.

The following case is not devoid of interest.

CASE.—*Convulsions following an old Injury of the Head ; cured by application of the Trephine.*—August 22, 1839. In company with Dr. A. Welch, of Wethersfield and Dr. Fuller, of Hartford, Dr. Buck visited Mrs. M'D. aged 35 years, a person in humble circumstances, who was then recovering from a severe attack of convulsions, for which it had been necessary to employ the most active depleting means. She was pale and feeble, but able to sit up, and had been confined for several weeks. Upon careful enquiry, the following particulars of her case were ascertained. Three years previous, while living in the city of New York, she received a blow in the middle of the forehead from a stone, which stunned her for a short time. On recovering her senses, vomiting came on and continued for several hours. Two or three days after the injury, Dr. Mott saw her and removed two small portions of bone. The wound continued to suppurate for several months afterwards and then healed up. About eighteen months after the accident, she was attacked with convulsions, when far advanced in pregnancy with her third child. Bloodletting with other depleting remedies relieved her, so that she recovered her usual health and went her full time. After a respite of several months she was attacked a second time, and relieved by the same means. She was now recovering from the third attack, which had been more violent and protracted than either of the preceding ; during the interval that had elapsed between it and the second attack, she has several times suffered from threatening symptoms, such as flushed face, drowsiness, and torpor, of which she had been relieved by blood-letting. She never suffered from headache, nor referred any uneasy sensations to the seat of the wound. During the attacks, her face and all her limbs were alike convulsed. She was evidently agitated by our visit, and her recollection confused ; with the assistance of her husband, however, she was able to make out the order of different occurrences. The cicatrix upon her forehead presented the following appearances ; it was an inch and a half in length, in the form of a narrow furrow, with its upper half lying in the median line, and its lower a little to the left of it, and terminating at the eyebrow ; it was one third of an inch in width, one-fourth in depth at its upper half, growing more shallow towards its lower extremity ; there was evidently a loss of a portion of the external table of the skull, and the cicatrix of the skin was evidently adherent to the bottom of the furrow. The parts were free from tenderness or pain. The patient as well as her husband, were exceedingly anxious for relief, and willing any operation should be performed that afforded a prospect of benefit.

Our opinion concurring in favour of trephining, Dr. Fuller proceeded to per-

form the operation. A semi-lunar incision was made across the forehead, with its convexity directed downwards, intersecting the cicatrix near its inferior extremity, and extending an inch on either side of it. From the middle of this, a second incision, two inches in length, ascended along the median line: the angles were dissected up, and the periosteum detached from the bone. The first application of the trephine included about half an inch of the upper extremity of the furrow, and the disc removed appeared to be of unusual thickness, owing to increased deposit of osseous matter upon its inner surface. A second disc was removed, joining the first at its lower edge, and including the remainder of the furrow; the thickness of this disc exceeded that of the first, and was nearly half an inch. It was perforated by a foramen that transmitted a vein from the scalp to the sinus; the surface of the dura mater exposed was of a normal appearance. A moderate oozing of blood took place during the operation; but no ligatures were necessary. A single suture secured the angles of the wound in their proper situations, and the edges were kept in contact by adhesive straps. Compresses of lint secured by long adhesive straps, completed the dressing. The patient after the operation expressed satisfaction at the relief it had afforded; her head, she said, felt altogether differently from what it had before. The wound healed kindly by the first intention, and in about a fortnight she resumed her accustomed occupations.

August 31st, 1840. This patient has continued to enjoy good health, without any return of convulsions; though once or twice she has had some threatening indications, which Dr. Welch has relieved by seasonable treatment.

INJURIES OF THE SPINE.

CASE 1.—*Supposed Fracture of the Fourth Cervical Vertebra; Recovery.*

Peter Gilman, labourer, born in Ireland, aged 26 years, of robust constitution and temperate habits, was admitted into the New-York Hospital with injury at the nape of the neck. On the 4th of December, 1839, he was suddenly thrown from his cart, while riding over rough ground, and struck with violence upon the back of his neck, that caused an immediate loss of the use of his arms. He raised himself, however, to a sitting posture, and with the assistance of another person, stood up and walked a short distance, when complaining of weakness, he was put upon a cart and conveyed home. On the way, he entirely lost the use of his right leg, and in part, that of his left. The second day following, this also became powerless like the other. Since the accident, his urine has been drawn off at stated intervals, and his fæces been voided involuntarily. He has been bled, blistered, and purged. On admission, the sixth day after the accident, his condition was as follows: No irregularity of the spinous processes of the cervical vertebræ could be felt, nor was any external sign of injury visible on the nape of the neck. Pressure, however, upon the spinous process of the fourth vertebra caused severe pains, that, he said, extended to the fingers and toes. Bending the head forward has the same effect, while rotating it gave him no pain. Paralysis of the lower limbs was complete. He was still able to raise his arm to a certain extent, with a sort of dangling motion, but could not extend the forearm, or flex the fingers; sensation was not impaired. Respiration was calm and easy, and performed without motion of the ribs or concurrence of the abdominal muscles. He was exceedingly restless, requiring his position to be changed every few minutes; his pulse was 64 and good. The urine drawn off at stated intervals was somewhat turbid, but without albuminous deposit; his fæcal evacuations were involuntary. Cups to be applied to the nape of the neck.

December 31st. Some improvement had taken place in his symptoms, he had become tranquil, and his general condition quite favourable. It was no longer

necessary to use a catheter; by the aid of pressure with the hand above the pubes, the bladder could be evacuated. There were at times spasmodic twitchings in his lower limbs by which they were drawn up, but he had no control over them by any act of volition.

After this, a gradual improvement in all his symptoms continued, so that in the month of May following, he was able to walk about with the aid of crutches, and to pass his feces and urine in the natural manner. A seton was kept open on the nape of the neck, and frictions with stimulating liniment employed daily, over the body and limbs. At the time of his discharge, in the following month, he was able to walk with a cane only, and was continuing to gain strength gradually.

CASE 2.—Fracture of the Second Lumbar Vertebra, without Paralysis.

Daniel Wilson, born in Wales, aged about 37 years, of very intemperate habits, was admitted into the hospital in a state of delirium tremens, which continued several days, until 24 hours before death. Nothing could be ascertained respecting the nature of the injury he had received, nor was its extent suspected until he recovered his reason sufficiently to make it known himself, when it was ascertained that, several days before his admission, he had jumped from a garret window 40 feet in height, in a fit of delirium. His right foot and ankle bore marks of contusion, and the extremity of the fibula was broken off. Before he regained his reason, it was impossible to keep him in bed; he was constantly going about the premises. After this, however, he began to complain of great pain, and soreness in moving his body, and as he lay in bed, his head was thrown far back. On examining his back, the spinous process of the second lumbar vertebra presented an angular projection; pressure upon it gave no pain, nor did paralysis exist.

On dissection, blood was found extravasated between the folds of the mesentery and into the muscular and cellular tissue, covering the lumbar vertebræ. The body of the second vertebra was broken into fragments, the first and third were uninjured; the membranous sheath, as well as the enclosed cord, were sound.

CASE 3.—Fracture of the Skull, and of the Second Lumbar Vertebra, without Paralysis.

Q. D., was admitted December 20th, 1830, into Ward No. 4, of the Marine Department. He had been knocked down in the evening by a carriage running against him. Several contusions of the scalp existed, besides a deep wound of an inch in length, in the axilla, from which there was but little hæmorrhage. The following morning, having recovered from intoxication, he complained chiefly of his back, and referred his pain to the lumbar vertebræ. There was no appearance of external injury or displacement; pressure did not much increase the pain. He was able to move in any direction, and even walked about the ward till the day he died; his face was flushed, and at times he was delirious. He was exceedingly averse to allow any thing to be done for him. At 11 o'clock, the third night after the injury, he was seized with a fit, and five hours after died.

Dissection.—There was a crack in the skull running from the vortex on the left side to the foramen magnum. The whole surface of the right hemisphere of the cerebrum was covered with a layer of coagulated blood, thickest over the inferior surface of the middle lobe, where the convolutions were softened into a pulaceous mass. The veins of the pia mater upon both hemispheres were loaded with blood. The second lumbar vertebra was fractured across the body. The anterior vertebral ligaments remained entire, excepting on the left side, where a small spicula of bone had obtruded. The cellular and muscular tissues around were infiltrated with extravasated blood.

IMMOBILITY OF THE LOWER JAW: DIVISION OF THE RIGHT MASSETER MUSCLE.

Case.—John Bishop, aged 19, August 19th, 1839. About 18 months before, he had had an attack of fever at the south, during which he was profusely salivated, and sloughing of the right cheek had occurred, with loss of considerable portions of the soft parts from the inside of the mouth. On recovery, he was unable to open his mouth, a band having formed, by which the jaws were kept firmly applied to each other. Unsuccessful attempts had been made to relieve this condition by dividing the constricting band, but without using means, at the same time, to force the jaws apart. Two portions of bone had been discharged.

The right cheek was full and swollen, the skin and subcutaneous cellular tissue supple and movable upon the masseter muscle, which could be felt contracting under the hand, whenever he put it in action. In a state of rest, this muscle felt hard and tense. On the inside of the cheek, a firm callous band extended from above the interval between the first and second upper molar teeth on the outside, to below the first molar tooth of the lower jaw, with a sharp unyielding edge, that would not permit the end of the finger to be insinuated between it and the outer surface of the teeth. The jaw was susceptible of a sliding motion, showing that the right temporo-maxillary articulation was movable. The upper dental arch stood a little in advance of the lower, barely allowing the blade of a table knife to be introduced between them. His voice was very little affected. He was able to take solid food by cutting it very fine, and insinuating it between the upper and lower teeth. His general health was pretty good, and he had observed no change in the condition of his jaw for a year past.

Operation.—A bandage of two fingers' breadth, and fifteen inches in length, was insinuated between the upper and lower teeth, and the ends tied so as to form a loop below the chin. One assistant held the head firmly, while another acted on the lower jaw, by means of the bandage, bearing down so as to put the band to be divided on the stretch as much as possible. The fore finger of the left hand was then introduced under the cheek, and the nail insinuated between the edge of the callous bridge and the molar teeth, to serve as a guide for the knife. A narrow bladed scalpel was employed, care being taken to avoid cutting near the middle of the masseter muscle, in order not to involve the parotid duct. Successive incisions from within outwards, and advancing from before backwards, guided by the sense of touch alone, were made on a level with the lower molar teeth, until the finger arrived at the last tooth; resisting bands were still further back and were divided. By repeated attempts with instruments that acted as levers in prying the teeth apart, sufficient space was obtained to introduce the speculum oris, which acted with great effect in rupturing the fibres which still bound the jaws together. Proceeding cautiously, in this manner, alternately prying and dividing the resisting bands, the jaws were separated so as to allow two fingers to be placed edgewise between the incisor teeth. The whole width of the masseter muscle was involved in the incision, and in some parts its whole thickness; the knife grating as if cutting through cartilage; the hæmorrhage was moderate, and ceased spontaneously. After the operation, the patient could himself open his mouth to the extent to which the teeth had been separated. A denuded bony surface was felt on the outside, a little behind the last molar tooth, and could be traced upwards to a rough pointed extremity, which was somewhat movable. A wooden wedge was introduced between the molar teeth of the opposite side, and required to be kept in as much of the time as it was possible for him to bear it. Considerable swelling and

inflammation succeeded, the following day, and continued for some time. The use of the wedge was persevered in.

After this the speculum was perseveringly employed, in order to effect dilatation of the mouth, and several bands were divided. The result was that, in March, 1840, his condition was as follows:—The right cheek is much less swollen than it was before the operation, and is soft and supple; the masseter feels hard. The forefinger can be introduced edgewise between the incisor teeth, and within these limits he has free use of the jaw, and perceives no tendency to farther contraction. The callous band on the inside of the cheek, exists very much in the same condition as before the operation, excepting that it does not advance as far forward.

The operation, then, succeeded only partially.

EXOSTOSIS ON THE UPPER SURFACE OF THE LAST PHALANX OF THE GREAT TOE, CURED BY EXCISION.

Case.—William Jewell, a seaman, born in Norway, aged 20 years, of robust and healthy constitution, first noticed this disease, for which he sought relief, about fourteen months prior to the 25th of September, 1839, the date of his admission to the hospital. At that time, after walking a great deal in a pair of tight new boots, he observed a small hard lump growing under the edge of the nail of the left great toe; by keeping it paired down close, he suffered little inconvenience. It had been partially excised, together with a portion of the nail, but had grown out soon after. At the time of the operation, to be now described, the toe presented the following appearances: From beneath the anterior edge of the nail, which was cut very short, a small tumor of the size of a split pea protruded, of a reddish-grey colour and tough firm consistence, but not apparently bony at its apex. It gave him no pain, excepting when he neglected the precaution of wearing an easy shoe. From the situation of the apex at the anterior edge of the nail, I supposed its base did not extend so far back as to make the removal of the whole nail necessary, and therefore proceeded, with the view of saving the matrix of the nail. After having been previously softened in hot water, and scraped thin, an incision was made across the nail with a straight narrow bistoury, a line and a half anterior to its root, and carried perpendicular to the surface of the bone beneath. Instead of reaching beyond the base of the tumor, as was intended, the knife passed into it. It was therefore necessary to repeat the incision at a more remote point, which was done in the same manner, two lines beyond the root of the nail, so as to include the matrix. On coming down upon the bone, the edge of the bistoury was directed forward, and made to graze its surface, thus including the nail, with the tumor at its origin. Its bony nature was obvious in cutting through its base, where the knife met with very great resistance. The surface from which it grew was shaved down, below the surrounding bone, until it had a healthy appearance. The resistance of the nail, perhaps, had determined the growth of the tumor forwards, by which Dr. B. was led to the opinion that it took its origin nearer the extremity of the phalanx. There was very little hæmorrhage, and the wound healed kindly under the application of simple dressings, and nitrate of silver occasionally, to repress the exuberant granulations.—There was no tendency to a reproduction of the diseased growth at the time of the discharge, October 21st, 1839.

DIVISION OF THE SPHINCTER ANI FOR ULCER OF THE RECTUM.

Case.—In a case of oblong ulcer of the rectum, on its posterior wall, with

raised edges, of long standing, and productive of severe symptoms, the following operation proved successful.

The patient was placed on his left side, with his hips at the edge of the bed, and his thighs drawn up. The nates being stretched apart, the index finger of the left hand, smeared with lard, was passed into the anus, and upon it a probe-pointed bistoury, flatwise; the edge was then directed towards the ulcer, and in withdrawing it, was made to divide the integument, and subjacent sphincter, by an incision of an inch in length. The hæmorrhage was moderate, and ceased spontaneously. A greased tent was laid in the incision, and a compress upon it was secured in place by a T bandage. The bowels having been freely evacuated, before the operation, very low diet and confinement to his bed were enjoined, for the purpose of preventing, as long as possible, his going to stool.

MISCELLANIES.

MR. WARBURTON'S MEDICAL REFORM BILL.

WE insert from the *Lancet*, the principal clauses of this embryonic Bill. The objections to it are not trivial, and appear to be generally felt.

"A Bill for the Registration of Medical Practitioners, and for establishing a College of Medicine, and for enabling the Fellows of that College to practice Medicine in all or any of its Branches, and hold any Medical Appointments whatsoever, in any part whatsoever of the United Kingdom."

Passing over definitions, &c. we proceed to the Clauses, which declare as follows:—

II. The costs of administering the Act shall be paid by an annual tax of [*blank in the Bill*] on every registered or unregistered medical practitioner in the United Kingdom, according to the provisions of the bill, forming the fund of a "Medical Registry Account." Any deficiency to be specially supplied by Parliament,

III. From and after 1842, registers of all persons practising medicine (in chief) in England, Scotland, and Ireland, shall be made and kept by three persons, nominated by the Secretary of State for the Home Department, whose offices shall be respectively situated in the three capitals, having the registrars of births and deaths throughout England, certain schoolmasters in Scotland, and officers of the police in Ireland, as sub-registrars.

IV. V. These clauses describe the duties of the sub-registrars, and require the medical practitioner to supply to them a schedule of name, address, branch of medicine, and nature and dates of his qualifications; "but," says the clause, "if he do not hold a medical qualification, then whether it is as being a chemist and druggist that he practises medicine in chief," and if under the Apothecaries' Act, or a right acquired by usage before that Act was passed; "or whether he practises medicine in chief without either holding a medical qualification or being a chemist and druggist." Each partner in a firm to do the same.

VI. VII. VIII. All this to be signed, returned before the 1st of April, 1843; or if no blank schedule to be filled up has been sent to the party by the sub-registrar, then the party must, before the 7th of April in every year, apply for one, to fill up and return, the sub-registrar being required to comply with the request speedily afterwards. The period and demand for such returns from medical practitioners are to be publicly advertised also. These returns are to

include the names, addresses and qualifications of "parties who practise medicine in chief in their capacity of chemists and druggists," as well as "parties who practise medicine in chief, and are not included in the division of persons who hold medical qualifications, or who do not practise in the capacity of chemists and druggists."

IX. The registers are to be printed and published *by the Registrars* afresh on the 1st of August in every year, so far as regards those persons who hold what is termed in the Bill a "medical qualification."

X. Permission is given to the *Secretary of State* to publish or not, as he may think fit, the two divisions of persons who "practise medicine in chief in their capacity as chemist and druggists," and those who "practise medicine in chief without being included in either of the preceding divisions."

XI. Any one may reprint registers.

XII. Medical practitioners may "require" any person who has returned himself in a schedule to prove the actual existence of his alleged qualification.

XIII. Persons not holding a "medical qualification" shall not hold any medical office in any public institution, or any district, parochial or otherwise, benefit society, or in either of the public services.

XIV. XV. XVI. The registry of a person to commence with the date of his "return." Changes of residence to be notified to registrars, and announced in supplements to the registers.

XVII. After the 31 of July, in the year 184—, *it shall not be lawful for any unregistered persons*: "even although he hold a medical qualification, to act as a medical practitioner in any part of the United Kingdom, or any custom or thing contained in any statute, charter, gift, grant, or deed, or any by-law, regulation, or statute of any corporate body, to the contrary notwithstanding."

XVIII. The possession of a "medical qualification," by a person whose name shall appear in the registers or supplements, which the *registrars* are to be required by law to publish, shall render it lawful for him "to make any reasonable charge for any time he may have employed in professional attendance on any patient in that part of the United Kingdom in which he is registered," and therein to sue for the same.

XIX. "Three medical councils, one for England, one for Scotland, and one for Ireland," shall be constituted, each to consist of 36 councillors, of whom, 12 shall be non-medical men "nominated and appointed" on the 1st of Oct. 1843, by the Secretary of State for the Home Department for the time being. Of these 12, there shall 3 of them annually, on Oct. 1st, vacate, at the bidding of the Secretary of State, their office, to be replaced by 3 other non-medical men, similarly nominated. The 24 other councillors shall be elected by those registered "medical practitioners in each respective country who hold a medical qualification," and shall be chosen, exclusively, from among the qualified electors themselves. The first of these elections to take place in the middle of September, 1843, and the registrar of each country to be on that occasion the scrutineer of the election. For the year 1844, the scrutineers to be chosen by voting-papers, by the electors, from amongst the electors. The 24 councillors to be elected in a similar manner. The voting-papers to be prepared by the registrars, and circulated by the sub-registrars, to be filled up by the electors, severally, and returned, sealed, to the sub-registrar, to be by him conveyed by post to the registrars in the respective capitals of each country, the votes of the electors to be kept secret by the registrars, they each reporting to the Secretary of State on whom the choice of the electors has fallen.

XX. Of these 24 elected medical councillors 6 shall annually, on each 1st of October, vacate their seats, by decision of the said medical electors pronounced a fortnight previously: and who, from amongst their own body, shall replace those 6, the metropolitan registrars, and the previously elected scrutineers, pre-

siding in each capital at the estimate of the votes, having on the first of August before, named an umpire between them. (This clause also directs that the 36 councillors shall indicate by lists, to the electors before each election, which 6 of the medical councillors they would "recommend the electors to cause to vacate," and whom "to elect, as six new councillors;" but that the electors may either reject or comply with this "recommendation" as they may think fit.)

XXI. The three metropolitan councils each to elect its own chairman, by ballot, annually in October. At meetings of the councils, 6 to form a quorum, Decisions therein to follow the majority of votes. Minutes of their proceedings to be kept, printed and circulated amongst themselves and the other metropolitan councils, and open to a senate hereinafter mentioned, and the Secretary of State.

XXII. Of these three councils of 108 persons, 12 members are to be annually chosen from each council to form a united Medical Senate of 36 persons. Of each 12, four persons are to be chosen from the non-medical division.

XXIII. This "Medical Senate of the United Kingdom," is, on the 4th of October in each year, in and after 1842, to meet in London, at a place named by the Secretary of State, and choose annually a President. Its proceedings to be conducted like those of the councils.

XXIV. V. The senate may make by-laws, to be laid before Parliament, for its own regulation, and to be binding also on the aforesaid councils, "and on all fellows and matriculated students, of the college hereinafter directed to be founded, and on all the examiners appointed by the said several councils, and on all the officers and servants of the senate or of the said several councils."

XXVI. VII. The councils may make regulations for giving effect to the by-laws of the medical senate; which regulations, however, the senate may subsequently disallow.

XXVIII. The senate may attend all meetings of the councils, and take part in their discussions; or attend the courts of the "Examiners."

XXIX. There shall be founded a "College of Medicine of the United Kingdom." Its "first fellows" shall consist of all the elected medical councillors of Oct. 1, 1843; and its future additional fellows shall be constituted of the like councillors for other years, all to be fellows for life; together with such other registered persons, possessing "medical qualifications," as the senate may, by by-laws made by the senate, pronounce to be eligible for election as fellows of the said college.

XXX. This senate shall, on commencing its duties, make by-laws to define what "medical qualification," possessed by a medical practitioner, shall entitle him to claim to be a fellow of the said college, without subjecting him to an examination in medicine. The before-mentioned councils shall "make regulations for carrying such by-law into effect;" and when any person so qualified shall apply for admission to the fellowship, the said council shall ballot for him, and reject or admit him according as the majority of their votes may decide.

XXXI. Persons not already in medical practice may be admitted to the fellowship upon examination, as follows:—The said senate shall make by-laws to define "the examinations, to which all persons claiming to be entered in the books of either of the councils, as *matriculated students of the said college*, shall previously to their being so entered, be subjected;" and the *age* they shall have attained, and "*touching the course of instruction to be pursued by students subsequent to their matriculation, and touching the medical institutions and schools, corporate or unincorporated, in the United Kingdom or in foreign parts, which shall be deemed competent for the instruction of students in medicine; and touching the registration of matriculated students during their course of instruction; and touching the age which persons admitted to examination for the fellowship of the said college shall be required to have attained;*" and touching the *examiners* whom the several councils shall have appointed, and touching the times and modes, and subjects of medical examination. And the senate may "relax the

rigour of such by-laws in favour of those students whose course of medical instruction may be advanced towards completion when those by-laws first come into operation." The councils are to appoint the examiners, who are to "examine persons claiming to be entered in the books of the council as matriculated students of the said college." And also appoint the examiners of candidates for the fellowship of the said college. The examiners are to report to the council what candidates they pass, and then such candidates shall be entered or admitted as matriculated students or fellows, as the case may be.

XXXII. The senate may empower each of the council "to ballot for the *expulsion from the college* of any fellow thereof domiciled in the country to which such council belongs, who may have been tried for and found guilty of committing any infamous crime or offence."

XXXIII. Any fellow of the college may, at his own request, be examined by direction of the senate, as a candidate for a certificate from the council, certifying his proficiency in medicine, or surgery, or midwifery, or pharmacy, or some other special branch of practice.

XXXIV. No councillor can be an examiner.

XXXV. It shall "be lawful for every fellow of the said college to practise as a surgeon-apothecary, or general practitioner of medicine, in any part whatsoever, of the British dominions;" or in the same capacity to any hospital, gaol, union, society, or other public place or body; and to "compound and dispense any medicine he may prescribe for his own patients," any where; and to sue for charges for medicine, operations, or attendance; and to receive any number of pupils or apprentices; and every such fellow shall be entitled "to all exemptions from serving on juries, inquests, &c. and all other exemptions to which surgeons or apothecaries are already entitled."

XXXVI. Fellows of the said college "who shall have received from any such council a certificate" of his proficiency in medicine, and "who shall also be a graduate in medicine in any university in the United Kingdom," shall, in addition to his other before-mentioned privileges as a fellow of the said college, "be also entitled to practise as a physician in any part of the British dominions, and to act as a physician to any hospital," &c. "or, after undergoing such examination as any duly constituted medical board may deem requisite, may serve as a physician in the navy or army, &c. and be entitled to every already existing privilege of a physician."

XXXVII. This clause makes a similar declaration with regard to surgeons, who are fellows of the said college, giving them, on obtaining an examination, a certificate of proficiency in surgery from one of the said councils, and already possessing a surgical qualification from some other college, or faculty, or university, entitling them to "act as surgeons in any part of the British dominions."

XXXVIII. The same as regards a fellow of the said college who may have received from one of the councils a certification that he has, on examination, "been found to be proficient in the art and business of an apothecary;" if, also, he be "a member, or licentiate, or certified proficient of some society of apothecaries of the United Kingdom, or of the faculty of Physicians and Surgeons of Glasgow, or of the Royal College of Surgeons of Edinburgh." Such apothecary may act as an apothecary any where in any part of the British dominions, &c.

XXXIX. "Fellows of the college who have received a certificate of proficiency in midwifery, may act as *surgeon apothecaries*, or, if they be graduates in physic, as *physicians to any lying-in hospital* in any part of the British dominions." (*Marginal note*)

XL. Fellows of the college who have received a certificate of their knowledge of the treatment of *lunatics*, may act as surgeon-apothecaries, or, if they be graduates in physic, as physicians to any lunatic hospital or asylum in the British dominions.

XLI. The senate may, if they think proper, under by-laws, purposely made by them, exempt any candidate for the fellowship of the college from the examinations, or from any part of the examinations, which such candidate would be liable to undergo before admission, if that candidate have already acquired "a medical qualification" in the United Kingdom, or a degree in medicine in some university abroad, of which the said senate may approve. The council to which he may apply shall then ballot for the admission of the said candidate.

XLII. Chemists and druggists may voluntarily apply to be examined by examiners named by the said senate. Their examination, "shall relate to the Latin language, the interpretation of prescriptions, the pharmacopœia, the articles of the materia medica, the quantities of different simple or compound medicines which may safely be administered to patients, chemistry, practical and pharmaceutical, and botany." To every person passing this examination the council shall grant a certificate of proficiency therein; and if such person desire a registrar to register him in a certain annual list of certified chemists and druggists, he shall be so registered. And "any person so certificated shall be entitled to carry on the business of a chemist and druggist in any part of the British dominions," and "if any person so certificated shall carry on the business of a chemist and druggist in any town, the population of which" amounts to — inhabitants, then "the laboratory or shop of such person shall be approved of as a school for pharmacy by each of the said medical councils."

XLIII. Every student "shall be deemed to have completed a proper course of instruction in pharmacy," who shall have attended such laboratory or shop, as above-mentioned, or any apothecary's or hospital, or medical practitioner's shop or laboratory, *recognized* by the medical council of the county, during a continuous period of not less than — years or months; a longer or shorter period for either kind of shop or laboratory as the by-laws of the said council may demand.

XLIV. The said senate may prepare and publish a national *pharmacopœia* for the use of all medical men.

XLV. All *medical assistants* in England, Scotland, and Ireland, to be *registered* from January 1, 1845, by means of a form, to be called "The Medical Assistant's Notice and Schedule," recording their name, age, address, medical qualification (if any), and those of the medical practitioners to whom they may be assistants. And when the annual registers of the medical practitioners of the country are published, those registers shall respectively contain, in juxta position with their names, those of the medical assistants whom they may severally be at that time employing.

XLVI. All *medical students* in the United Kingdom, who intend to obtain, by and by, a "medical qualification," are to be *registered* by the parties with whom they may be apprentices or pupils,—dates, ages, family domiciles, the hospitals, or medical schools they may be attending in that twelve months; the specific courses of lectures and demonstrations they may be attending: the name of every professor, lecturer, demonstrator, and the date and duration of their attendances on the instructions of those persons; and all professors and teachers in every university, college, school, hospital, or dispensary, in the United Kingdom where medicine is taught, are to assist by the registrations of their pupils in rendering this registration of pupils and their studies complete.

XLVII. No part of any course of medical instruction, excepting that for which a student shall have been *registered*, shall be allowed by the senate to qualify the student for *admission to examination*.

XLVIII. If any medical student be *studying* "in foreign parts," with the intention of becoming a candidate for examination as aforesaid, "no part of any such foreign course of instruction shall" qualify him to be admitted to such examination, unless he *once a quarter* sends notice thereof, with full particulars (certified by the foreign teachers), to one of the registrars at home.

MEDICAL REFORM.

We have inserted two Bills, which will shortly be brought before the Legislature. Most persons seem to think them impracticable. Mr. Wakley promises another. The difficulty is, that we do not start *de novo*. There are colleges in esse, with funds, interests, influences, and an actual state of medical society created by them, to contend with. Yet Reform is fermenting in the minds of the profession, and Reform there must be. If the Colleges remain, there are things that probably will not—self election—irresponsible application of funds—heterogeneous and clashing regulations—local privileges jostling with each other—apprenticeships. These are contrary to the spirit of the times, and neither by force nor art can they very long endure. If the Colleges survive, which, with proper alterations, we believe they may, it becomes a question, whether there should not be some general presiding body, independent of the individual collegiate corporations, and calculated to ensure their future co-operation and consistency. Difficult as it may be to effect this, it will, perhaps, be more difficult, under existing circumstances, to effect any thing beyond this, and, indeed, the Bills of Mr. Hawes and Mr. Warburton seem a practical confession of that difficulty. It is hard to suppose that with those gentlemen's political opinions, they would not have attempted more, if more had appeared to be attainable.

The complicated registrations with which we are threatened would saddle us with expense and harassment, and would expose us to the chicaneries of law. King Log would shortly be King Stork, and our actual rather speculative and political evils would become direct, personal, and social ones. What we want is a well-considered extension of our own, old fashioned, English custom of self-government. What is attempted to be put upon us is a *tertium quid* between it and centralization. The Government are to have a thumb in the pie—and the lay-people (what are they to us ?) are to have another—and we are to put our fingers in;—and a pretty pie it would be! We believe we are uttering the voice of the profession, when we assure the propagandists of this modern political school—something between French and English, with the bad of both—that we do not want them; can do better without them; and their notion of reform is not our's. We would recommend those who are smitten with the centralization passion to read M. de Tocquevill's book. A Frenchman, a profound and original thinker, has utterly sealed its condemnation.

Report says that the Medical Corporations are on the alert, and that meetings have been held with the view of adopting precautionary measures. For our own parts, we would hope that the liberal and enlightened members on the several councils will see the propriety, nay, the necessity of conceding what the state of society and opinion unequivocally demand, and what it must be impossible for any lengthened period to retain. To concede with dignity and promptitude will be to concede with safety; and will tend to prevent that lamentable confusion which will, otherwise, infallibly ensue. We shall be spared such crude and clumsy legislation as Mr. Hawes and Mr. Warburton threaten to inflict upon us.

EXTRA-LIMITES.

PROCEEDINGS OF THE PHRENOLOGICAL SOCIETY AT GLASGOW, IN
SEPTEMBER LAST.

We perceive that this Section has been very active and successful at Glasgow, during the meeting of the British Association. We select a couple of specimens from their proceedings.

“Monday, September 21, 1840.”

“The Hall was crowded with ladies and gentlemen.

Mr. Atkinson read a communication from Mr. R. Cull, of London, detailing a case of precocious musical talent, in the history of the *Infant Sappho*, Louisa Vinning. She was born at Kingsbridge, Devonshire, in November, 1836, being now (Sept. 1840) three years and ten months old. Her father, John Vinning, is a good musician: he sings, and plays well on the piano forte and violin, and, having also exhibited his musical talent at a very early period, he was educated for a musician, at the expense of Mr. Garrow. Mr. Vinning has two brothers, of considerable musical talent, who have left their business to make music their occupation. One is a violinist, the other an organist. Mr. Vinning's father possesses a natural talent for music, which he manifested by playing the flute, in the band of a volunteer regiment, for several years. He knows nothing of the technical language of music—he played entirely by ear, and he kept tune and time well.

Louisa Vinning, surnamed by Mr. Parry the *Infant Sappho*, enjoyed music at a very early age. ‘She was only nine months old,’ her father states, ‘when I first observed the intense delight she derived from music: when crying, the sounds of a musical instrument immediately soothed her, her whole frame moving in unison with the measure, and her face beaming with enjoyment. I played to her occasionally on the violin. I took the opinion of several medical men on the propriety of indulging her in this kind of amusement, lest she should be injured by too early excitement. Their advice was, to give her gentle exercise in singing, and to guard against late hours.’ She sang before she could speak. Her passion for music increased, until she seemed to require an atmosphere of music to exist.

In the early part of 1839 she was discovered to have walked in her sleep, and, to prevent accidents, she was afterwards put to sleep on a sofa in the sitting-room until the family retired to rest; she frequently sang in her sleep, and, one evening, when only two years and eight months old, she sang, sweetly and distinctly, a melody perfectly new to her father, and repeated it several times, so that he wrote it down, gave it to Mr. Blockley, who arranged it, wrote the poetry, symphonies, and accompaniments, and called it the *Infant's Dream*. Mr. Thalberg, the celebrated musician, in a letter dated 11th December, 1839, speaks of her astonishingly correct singing, and her pleasing voice. Sir George Smart, in a letter dated 3d April, says, ‘I beg leave to state that I consider her a most wonderful child, possessing strong feeling for music, with an extraordinary correct ear both for time and tune; her singing is perfectly natural, without effort, and her infantine manners and childish appearance prove her extreme youth.’ Mr. Moschelles says, in a letter dated 29th March, 1840, ‘she appears to me, not only to be most liberally gifted with a voice of unusual compass, but also with a sensitiveness of organisation, whether as concerns the power of correctly retaining melodies, or of reproducing intervals, very remarkable, being only three years and a half old.’

She sung before the Queen and Court at Buckingham Palace, on 3d August, 1840, and received substantial proofs of the Queen's delight at her talent. She is now singing three nights a week in the Lecture Theatre of the Polytechnic Institution. She sings the musical *sounds* of the melodies without words; and repeats any Italian air, after hearing it only three or four times. Her style of singing is very remarkable for similarity to our first opera singers. It is appropriately supported by the adoption of the natural language, gestures, &c. to express the sentiment of the air she sings. In her graceful though infantine action she is often very expressive; but, like most public singers, there is commonly a redundancy of action, and that, too, of an exaggerated nature. Her public singing at the Polytechnic Institution commonly comprises the following:—

1. An Italian Air.
2. The Infant's Dream.
3. The proof of her power to sing passages struck on the Piano on the instant, which frequently terminates in some Italian air.
4. Her power of changing the style and key of music without the usual preparation, in which she passes at once from some Italian to an English, thence to a Scotch, and finally to an Irish air.
5. An Italian Air.
6. Finale, part of a harmony in the National Anthem of God save the Queen.

All her talent is natural, for hitherto she has received no technical instruction in music. Her voice is two octaves in compass; the lower notes are very sweet in quality, and she possesses great power of voice. She can introduce occasional sharps and flats with great precision and elegance. When false notes were purposely played to try her, she invariably ceased, and evinced some anger.

She is an engaging child, and, from her elegant movements, is much admired. She has a great talent for dancing also. She is very energetic, her general activity is great, her feelings powerful, and very exciteable. She is self-willed, destructive, very ready to talk, and very arch.

The essay then stated the Phrenological measurements of the head, all of which were very large for a child of her age. She is of dark complexion, dark brown eyes, brown hair, slender form, restless movement of body and eyes, and rapidity of action, which denote great cerebral activity. The temperament is *Bilio-nervous*. The basilar region of the brain is large, but the coronal predominates. The lateral is very large at Destructiveness and Secretiveness. The anterior is also large. The profile much resembles the profile portrait of Clara Fisher. In so large a sized head there are no small organs. Those *very large* are *Secretiveness, Destructiveness, Benevolence, Firmness, Love of Applause, Imitation, Melody, Tune, Comparison*, the others are large.

This head is interesting musically as an example of the energetic manifestation of musical talent. It is also interesting as it so nearly corresponds, in its present powers, with the infantine powers of Mozart, Crotch, and Kellner, as quoted in the Phrenological Journal, new series. The case is interesting, as pointing towards a circumstance in the production of precocious talent. Mozart, Crotch, Kellner, and this child, are each offspring of musical fathers; and the two latter of musical paternal grandfathers. Other circumstances also operate as causes, for the offspring of all musicians are not musical, and but few are precocious musicians.

After the reading of the case, some interesting remarks were made by Mr. Atkinson, Dr. Gregory, Mr. De Ville, Mr. Simpson, and Mr. Combe, and several other cases of precocious musical talent were alluded to by the different speakers. Dr. Gregory said it was a great pity that this child should be subjected to such increased activity of brain, which, it was well known to phrenologists, was very

liable to produce disease, and lead to a premature death; and Dr. De Ville stated that he had intimated to the parents of the infant Lyra, another musical child, that the exertion of brain to which she was subjected, in consequence of her public exhibitions, would infallibly bring on premature decay; and, as her parents did not listen to his advice, which was agreeable to the phrenological doctrines, the child, by the continued and severe exercise of her brain, fell into disease and died at an early age.

Mr. Simpson then read a most interesting and highly instructive essay on 'the phrenological explanation of the result of a change of treatment of youth, from animal and violent to moral and benevolent, with illustrative cases.' This was listened to with deep attention, and seemed to make a great impression on the audience. Mr. Simpson began by showing how much phrenology had done in introducing and systematising the only education worthy the name—a character-forming, a humanity-improving education—an education which rightly trains and exercises the faculties which phrenology has distinguished as primitive—each faculty upon the objects in nature related to it. He showed that the faculties in activity in one individual rouse the same faculties, by sympathy, in another; and hence the vital importance that the trainer of youth should manifest only those faculties which it is desirable to strengthen in his pupil, and to restrain and repress those which are never called forth, in abuse, but to injure or annoy. The pupil, therefore, should never see the teacher, nor the child the parent, angry, loud, or violent; never insolent and tyrannical; in phrenological language, manifesting *self-esteem*, *combaticiveness*, *destructiveness*: but, on the contrary, should witness only justice, kindness, with temperate firmness. *Benevolence*, which is moral power, ought to be the great engine of education. It is power with man and beast. The Arab never strikes his horse—yet the beautiful Arabian, which lives, eats, and sleeps with his master, is the best educated horse in the world. Mr. S. then proceeded to show that the treatment of the young has hitherto been the reverse of all this. It has been commanding, tyrannical, and violent. He drew a picture of the flogging and fagging system, and the cowardly frauds which it engendered in school, and the coarse and brutal, and especially puerile, character it produced in society; witness the police reports of our *adult* school-boys. Some boys either passively or actively resist the violent system, and are pronounced unmanageable. The boy, we may suppose, has been sent from a strict school, as the severe were called, to one still more strict; and he is duly returned from each with an apology, that he defied all authority, and, having arrived at the point of beating and kicking his master, was beyond his management. This unmanageable boy, we shall suppose, is seen by a phrenologist, who discovers an excellent moral and intellectual organization, in connection with a large animal; and knowing that, while the animal alone has been exercised, the others, especially the moral, have been left in abeyance, he at once declares that the unfortunate boy is a *mismanaged*, not an unmanageable subject. He proposes a complete change of treatment. He addresses himself to the higher sentiments and intellect, no longer excites the low and violent feelings, and soon produces a complete change of conduct. This is not a mere theory, for many examples might be adduced of its practical value. Mr. S. mentioned a gentleman of the most active generosity and beneficence, who at school was mistaken, by those who could not read the better faculties he possessed, for an incarnation of the evil one. He was beaten at school, but always beat again, and was repeatedly sent home as a hopelessly unmanageable boy. Subjected to the old system of '*taming*,' he was found as unmanageable as the Hyena. Left to himself, his higher feelings began to work spontaneously from their own internal energy; and now they take the lead so perfectly that the animal faculties, which formerly beat his teachers, merely supply energy in the prosecution of his philanthropic views. He is himself

a well-informed phrenologist, and knows the process of his own transformation.

Mr. S. then proceeded to describe two most gratifying experiments made under his own roof—first, upon two young ladies of high rank, at the request of the parents, placed in his family, and educated along with two of his daughters, who were of the same age. The whole process was kindness, confidence, and intellectual guidance, by which a large amount of waywardness and selfishness gradually gave way to the growth of excellent moral sentiments, till the characters were almost metamorphosed. The other instance was that of a youth, now past 16, who, a year ago, presented one of the most unmitigated specimens of all the unendurable faults induced by subjection to the violent method of common schools, and the examples of coarseness and brutality there presented. No school could keep him—no home could endure him—yet this youth is born to a large fortune, and a high rank in society. Mr. S. who is intimate with his parents, invited him to his house a year ago, and giving him line, as the anglers say, for a week, became aware of the domestic nuisance the poor boy thought it manly and *funny* to make himself. In one week, he became so intolerable to the family that there was an urgent and general request to send him home again. Instead of this, a trial of better conduct was deliberately proposed to him, and his powers of succeeding explained. His faculties for good, and the miserable error of his previous education, were all detailed to him. He was enlisted as a principal agent in his own reform, and the change was the doing of a day—so that, for three weeks more that he remained, his manners became quiet, obliging, and gentlemanly. Kind and confiding treatment had great power over him; and treated, on his return home, in the same way, the sudden change surprised his friends as much as if it had been wrought by miraculous agency. It may be believed that earnest application was made for his return to the scene of an experiment so auspiciously begun, if it could be made to suit Mr. S.'s family arrangements. The experiment was too interesting to the experimenter to be declined; and the youth has now been the intimate of Mr. S.'s family for a year; and, subjected to its influences, treated as a gentleman, and allowed all proper liberty and indulgence, he gives ready obedience to the authority of good sense and good feeling; and no more dreams of rudeness, or any form of old school misconduct, than he did of common civility in his former state. The moral command of kindness over him is manifold greater than was ever yet achieved by severity. There is much yet to do with feelings and habits so perverted as his were; but he is already a *comfortable inmate*, and within the range of yet higher moral appliances. Mr. S. promised to report further progress to the Association when it meets again, and stated that he possesses full liberty from the parents to make any use of the case he may think proper, for educational good.

Mr. S. concluded his eloquent and most instructive essay, with stating that he offered this and the other cases, to show that the educational system—based, he was proud to say, on phrenological principles—of which he was a humble disciple and unworthy advocate, is *practical*, and not the mere chimera which its uninformed, prejudiced, or interested enemies represent it. He was called a visionary—he begged to be judged by his practice, not merely in these cases, but in numerous seminaries now founded on his principles. He retorted the title of visionaries on his opponents, who persevered in a system which has produced nothing but evil, and has retarded, and is retarding, the progress of society. Mr. S. warned his hearers that at the age of 15, the softening and particular influences of a private family, with a subject or two, or a very few, is necessary. No large school can produce much effect on a boy who has had no *infant training*, and all the *mistraining* of ordinary schools. Mr. S.'s subject to experiment was not in the least improved by being placed at a large school, which had even adopted the most advanced views, from which accordingly his parents were requested to remove him.

CASE OF APPARENT EXCEPTION TO THE RULES OF AUSCULTATION OF VALVULAR DISEASE OF THE HEART WITH EXPLANATIONS OF THE ANOMALIES.

SARAH FRIGHT, æt. 28 a pauper residing in the workhouse of the Thanet Union, had laboured for some years under general debility and local disease of several parts. Her greatest sufferings, perhaps, was referred to the uterus and neighbouring parts, and she required the habitual use of the catheter. She complained of almost constant palpitation, with pain in the region of the heart, dyspnoea, occasional though unfrequent cough, and the usual train of thoracic symptoms. Frequent and severe headache; nervous system generally deranged.

About two years ago, she was admitted as an in-patient of St. George's Hospital, where she was for the first time subjected to a competent physical examination. Having been sent up to Dr. Hope, he found a diastole murmur over the aortic valves, with a jerking, though feeble, pulse; and he therefore gave a diagnosis of *aortic regurgitation*; but, as no other murmur was heard, he confined his valvular diagnosis to this circumstance. On other grounds, *dilatation* and *flabbiness* of the heart were added to the diagnosis. The signs were not observed to undergo any change during a month which she spent in St. George's Hospital.

From that time I have had frequent opportunities of examining her, and having invariably found the aortic regurgitant murmur to be the only one present, I did not anticipate material disease of any other set of valves. She died October 6th 1840, after the gradual supervention of dropsy and the other ordinary consequences of cardiac disease. It may be added that the pulse became small, weak, intermittent, irregular and unequal—conditions especially connected with disease of the mitral valve, and with softening of the heart.

Autopsy.—The uterus was extensively diseased. There were two quarts of fluid in the pleura. *Pericardium* was healthy and without effusion. *Aorta* was natural. The whole heart was dilated, soft, and flabby. *Auricles*. Both were dilated and attenuated, the left to a very considerable degree, and their tissue was softened. *Ventricles*. Both were dilated without thickening, and their tissues were soft, pale, and flabby. *Aortic Valves*. Their expansions were thickened and contracted, and their angles adhered to each other over an extent of about two lines, by which, together with contraction of their depth, they were depressed a quarter of an inch below the level of their angular insertions, and the circumference of the aperture was so far diminished as to admit the thumb only. *Pulmonic Valves*, natural. *Mitral Valve*. Its layers, as well as the chordæ tendineæ, were exceedingly thickened by fibrous tissue, and its aperture contracted, so as to admit the passage of one finger only. Its margin was flat and flexible,—not thick and stiff like a ring,—and its shape was an irregular slit. The anterior lamina was thickened, though not shortened, chordæ overlay the orifice so completely and accurately as effectually to prevent regurgitation,—which was, indeed, further proved by the absence of murmur. *Tricuspid Valve* was equally and similarly contracted, but rather less thickened. The dissection was made by me in the presence of Dr. Hope.

Remarks.—This case presents a grater number of exceptions to general rules of valvular auscultation than I have seen, or found recorded, in any other single instance. Dr. Hope has, in his work, pointed out, in different cases, all the exceptions alluded to; but neither he nor any other writer, to the best of my knowledge, has met with so considerable contraction of the aortic orifice constantly unattended with murmur.

I shall notice these several exceptions in succession, commencing with those of the auricular valves.

Both these valves, in the case before us, were so contracted as to admit the passage of one finger only; yet they were not productive of diastolic murmur, (*i. e.* with the second sound near the apex of the heart.) The same was noticed by Dr. Hope in the parallel case of Christian Anderson; also in those of George Sharpe, Mrs. C——n, and Elizabeth Dennis, in which the mitral valve alone was materially diseased; and he states that, “ever since he has been able to detect aortic regurgitation with certainty, he has found the mitral diastolic murmur to be exceedingly rare,” having hitherto met with it in two cases only, *viz.* N——, Esq. and John Groff, a case with which I supplied him. He thus converts the previously received general rule of Laennec into the exception, the general rule in his opinion being, that *contraction of the auricular valves is not usually productive of diastolic murmur*. He offers the following explanation of the fact. “Much investigation has led me to ascribe its feebleness (*viz.* of the diastolic murmur,) when it does exist, and its absence in circumstances where it might have been expected, to the weakness of the current of blood flowing during the diastole from the auricle into the ventricle. This weakness allows the blood to pass in silence through the aperture when only slightly contracted; and, when the weakness is preternaturally augmented by debility of the heart, even a high degree of contraction is not productive of sound.”—*Treatise on Dis. of Heart*, 3d Edit. p. 79.) This explanation is perhaps the only one that can be assigned in the present state of our knowledge, and it is probably the real one. The present case certainly exhibited the circumstances requisite for its application, the patient's circulation being exceedingly weak.

So much for the *diastolic* murmur of the auricular valves; I next proceed to *systolic* murmur of the same, which was absent in the case before us.

In my account of the dissection I have expressed my belief that the adaptations of the parts of the diseased auricular valves were so accurate and complete as effectually to prevent regurgitation, the margins of the orifice being flat, and the anterior lamina so overlaying the posterior as, by oblique pressure (for these are undoubtedly oblique valves), perfectly to close the aperture. The possibility of this arrangement of parts is so manifest, that it needs no discussion; and I may remark that nothing is more common than moderate fibrous hypertrophy of the mitral valve in cases of hypertrophy of the left ventricle and otherwise, in which we are accustomed to admit, and with propriety, that the valve is efficient. If, then, the valve close, though with a higher degree of disease, it must still be considered efficient as a *closing* valve. It appears to me probable that, in Dr. Hope's case of Mrs. C——n, in whom there was no regurgitant mitral murmur, the valve closed completely, in consequence of the aperture, which only admitted a quill, being in the form of a slit.

But independent of such cases as these, in which it is probable that the valves are capable of closing, there are others, according to Dr. Hope, in which they may be incapable of closure, yet, from mere feebleness of the regurgitant current not produce a murmur. He says, “When that force (*viz.* the great force of the ventricular contraction) is much diminished, by softening or by dilatation with attenuation, the murmur may be much more feeble—nay, *sometimes even extinct* I have, for instance, met with several cases, in which a murmur attended every strong contraction of the ventricle, while the two or three following contractions so feeble as barely to occasion a pulse, were productive of a valvular click only, without murmur.”—(*Treatise*, &c. 3d edit. p. 77.) But though such cases prove conclusively that mere feebleness of the regurgitant current may cause the murmur to fail, they would cause no obscurity in diagnosis, because nothing less than almost complete *intermission of the pulse* suffices to weaken the regurgitant current to the degree required; for we see, by Dr. Hope's cases of Christian Anderson and George Sharpe, to which I could add many of my own, that the highest degrees of dilatation or softening are insufficient to suspend the murmur during *full* ventricular contractions. In all cases, therefore, the

murmur would probably accompany every contraction fully developing the pulse, and this would be sufficient for all purposes of diagnosis.

We may, therefore, dismiss the exceptions to the existence of regurgitant murmurs when the auricular valves are diseased, by the conclusions—1. That when a valve, however diseased, closes completely, it is efficient so far as its closing function is concerned; any evils resulting from simultaneous contraction being a separate question. 2. That where the valve does not close, there will always be a murmur with full contractions, and this will suffice for diagnosis.

I now proceed to the aortic valves. I am not aware of any well-attested case on record, except the one before us, in which there was considerable contraction of the aortic orifice by its valves, without a systolic murmur. Dr. Hope, at page 576 of his work, has referred to the only case within my knowledge that approximates to it. "This (the high key of aortic murmur)," says he, "is well exemplified in another individual at present under my notice, affected with disease of both valves, (aortic and mitral), in whom there are from two to five beats of the heart accompanied with grating murmur, (mitral), but no pulse in the radials: then succeeds a stronger shock with a pulse, and a hissing opposite to the aortic valves." Though a post-mortem examination is not attached to this case, there can be no doubt that the hissing murmur was referable to a contraction of the aortic valves or orifice. We have, therefore, such a contraction not producing a murmur whenever the ventricular diastole was feeble; just as we have seen the same to occur, under the last head, in the case of the mitral valve. It accordingly becomes a question whether feebleness of the circulation was sufficient to account for the *constant* absence of murmur in the case before us of Sarah Fright, in whom the aortic valves only admitted the passage of a thumb. In favour of the affirmative, it may be stated that not only was the whole organ dilated, soft and flabby; but that both the mitral and tricuspid valves were so contracted as to admit the passage of one finger only, whence the supply of blood to the ventricles might have been scanty. It is conceivable that this scanty supply, feebly projected by the softened left ventricle, and still further retarded by the constant retrograde pressure of the regurgitant stream, might have passed in silence through an orifice, which though contracted, was still considerably larger than the mitral aperture, by which the blood was admitted. It is also possible that the infundibuliform shape of the aortic valves contributed to the silence of the passage.

Whether this be thought an adequate explanation or otherwise, it may be stated, independent of any theoretical considerations, that, where the concurrence of so many and so important circumstances as existed in this probably unique case, is requisite to constitute an exception to the general rule, that contractions of the arterial orifices generate a systolic murmur, the exception must necessarily corroborate the rule. To believe otherwise would require a singular share of credulity; nor would less be requisite to imagine that such exceptions would be frequent; or that, when they did occur, they would materially deteriorate diagnosis: for that would generally happen which happened in this case, viz. the associated lesions with their signs would abundantly reveal the leading features of the malady. In the case of Sarah Fright, a stethoscopic examination at once pointed to structural disease of the heart, and to disease that was incurable; faithfully indicated the existence, and one of the seats—certainly the most important—of valvular disease; unveiled the dilatation and softening of the muscular substance; rendered the treatment definite, consistent and rational; and led to a prognosis which the great instructor, time, has only too accurately verified.

On the other hand, as the notion of infallibility is injurious to cautious research, an exception, however rare, is a salutary check on overweening confidence.

JAS. FREEMAN.

Minster, Isle of Thanet, Nov. 5, 1840.

ON DISLOCATION OF THE ANKLE-JOINT FORWARDS AND BACKWARDS; AND ON REPRODUCTION OF BONE AFTER THE OPERATION OF TREPAN. By James Douglas, A.M. Lecturer on Anatomy, College Street, Glasgow. (Read before the Medical Section of the British Association at Glasgow, 19th September, 1840.)

It is stated by Professor Samuel Cooper, in the last edition of his invaluable Dictionary, that dislocations of the tibia at the ankle forwards and backwards, are not common; and that during fifteen years Dupuytren scarcely met with two or three cases, though he saw some hundreds of lateral dislocations. I have happened, in my short experience, to see three cases of these accidents, the histories of which I now propose to read to the medical section, shewing at the same time the preparations which were made from two of them.

Mr. Adams, in the Cyclopædia of Anatomy, gives it as his opinion, that no satisfactory example is recorded of luxation of the ankle-joint, without fracture of one or both malleoli. He also doubts the possibility of a *complete* luxation of the tibia forwards, so that the inferior articular surface of that bone shall be entirely in front of the articular surface of the astragalus. He conceives that the more common form of this luxation, or perhaps the only one, is what has generally been called a *partial* luxation forwards; when the tibia does not entirely leave the astragalus. Even this form, as I have already remarked, is so rare, that I have ventured to think that any instance of it may be acceptable to the surgical portion of the Association.

A woman, aged 60, died of cancer of the breast in the Glasgow Royal Infirmary in the year 1834. She had an unreduced dislocation of the left ankle-joint forwards, of two years' standing, which I removed and prepared. The cast which I lay before you was taken from the limb after death. It shews the ankle in a state of complete extension, the toes being pointed down. A deep curve is seen behind, where the tendo-Achillis should be straight; the heel is lengthened and the fore part of the foot is shortened. The anterior edge of the lower end of the tibia makes a projection in front, and a notch exists below it, between it and the division of the foot. The outer ankle is found in its proper place; but the inner one is seen to be thrown forward about three quarters of an inch.

The following is the appearance of the parts on dissection. I describe them with the foot resting on the sole.

Ankle is completely extended and quite stiff. Tibia rests about three quarters of an inch further forward than it ought. Articulating surface of astragalus is not visible in front, but is felt far back, under the arch of tibia. Anterior edge of tibia is exactly over the articulation of the astragalus with the os naviculare, and nearly three-fourths of an inch above it; so that a small part of scaphoid cavity of tibia behind still rests on the pulley of the astragalus. The tendon of the tibialis anticus by this means runs in a straight line to its insertion at the internal cuneiform bone, instead of curving forwards. Behind, the astragalus projects so much that the flexor longus pollicis does not run in its groove on the tibia at all. The astragalus and os calcis are in this portion relative to each other, and their posterior ligament is entire. Some additional ossification has taken place on back of tibia, close above the astragalus.

Externally, the external malleolus remains perpendicular in its situation, with its three fibulo-tarsal ligaments entire. A hollow runs obliquely upward and backward from its anterior edge, shewing where a fracture had taken place, the superior anterior portion being thrown forward along with the tibia. Some new bone is deposited on the junction. The peroneal tendons preserve their proper relations.

Internally, the deltoid ligament seems to have been ruptured, though its place is now supplied. The tibio-fibular ligament must have been ruptured,

though the new deposits of bone prevent its state from being accurately ascertained.

Neither Sir Astley Cooper nor Dupuytren has ever seen a dislocation of the tibia backwards from the astragalus, nor has any instance been recorded by any other individual. In the article in the *Cyclopædia of Anatomy* already referred to, a case by Mr. Colles of Dublin is noticed, supposed to be one of dislocation backward; but from the account, I suspect it must have been one of fracture close to the ankle-joint, such as I am now going to describe.

Hugh Macnab, æt. 41, was admitted into the Glasgow Royal Infirmary in July, 1834. Three years before he had fallen through the joists of a new house, upwards of 60 feet, and was struck on anterior aspect of left leg, immediately above ankle, by a plank which fell with him. A fracture above the joint took place, and though he was put up in splints for three months, union was never obtained, and a false joint formed.

On examination, lower portion of tibia, with internal malleolus, was felt attached to astragalus, while shaft of tibia was thrown backward. Considerable doubt existed among the gentlemen who examined the case, whether the fibula was fractured or dislocated. Some thought it was a pure case of dislocation of both bones backward. Leg was three-fourths of an inch shorter than right, and foot seemed very long anteriorly, and very short behind. (See cast.) When he walked, the lower end of the shaft of the tibia pressed against the tendo-Achillis, making it project backward, so as to cause considerable pain. This projection is seen in the cast. The fibula is seen projecting in a similar manner on the outer side. He was thus prevented from working as a labourer, and he insisted on having his foot amputated. The following was the state of the parts as seen upon dissection.

Tibia and fibula (see preparation) are both found to be fractured transversely, immediately above ankle-joint, which remains perfectly entire. Each malleolus remains in its natural situation, with the different tendons lying in their proper grooves. A thin arch of the tibia, not a quarter of an inch in thickness, remains over astragalus, and has formed a ligamentous connexion with its articular surface. Fractured surface has become smooth, and covered with a periosteum.

The shafts of the bones pass backward and downward; their extremities are covered with cartilage, and have received new fibrous capsules, derived from the deep fascia of the leg, in front and on each side of the tendo-Achillis. End of tibia does not rest on the os calcis, but passes backward and downward against the tendon.

In corroboration of the opinion expressed above, that there is no such thing as dislocation of the ankle-joint backward, I may relate a case which Dr. Lawrie has had under his care for some time, and which he asked me to go to see, as an excellent illustration of this subject.

Alexander Laird, æt. 41. Two years and three months ago fell down a coal-pit, a depth of about 20 fathoms, and in addition to other injuries, sustained a compound fracture above right ankle-joint. The wound ran along the inner side of the foot, where a fistulous opening still exists, through which eight pieces of bone have been discharged during the last six weeks. The bones of leg were thrown backward, so that the case was taken for one of dislocation backward, and the injury seemed so severe, that amputation was proposed. To this the patient demurred, and the limb was accordingly put up in splints; but from the unruly and dissipated habits of the patient, could not be kept perfectly reduced. The state of the parts now is as follows.

Toes are pointed down, and leg is shortened, so that he wears a cork sole nearly an inch thick at the heel. There is slight mobility of the toes, but none of joints across foot, or of ankle-joint. Foot is contracted longitudinally, so as to measure nearly an inch shorter than left. Both inner and outer malleoli are in their proper places in relation to foot, but bones of leg lie in a line which

falls behind the ankle-joint. In front there is a hollow, above what appears to me to be the ends of the tibia and fibula, fractured immediately above the ankle. In fact, I consider the case to be one exactly similar to that of which I have exhibited the dissected preparation, and his foot is as like the cast of Macnab's foot as it is possible for the foot of a different individual to be.

It is stated by Professor Cooper in his Dictionary, in both the articles "Trephine" and "Necrosis," that reproduction of bone in the cranium is rare, and that the deficiency of bone is *never* entirely obviated. The portion of the frontal bone which I now lay before the section exhibits a trepan-hole completely filled up with bone.

The man from whom I took this specimen was forty years of age when he died, in consequence of a severe injury received in a coal-pit. While attending him, I observed a crucial scar on his forehead, and felt under it a depression in the bone. He told me that when a lad of 12 or 14, having been engaged in one of those fights which delight the natives of the Sister Island, he sustained a fracture of the skull, and was trephined by a surgeon in Armagh, 26 or 28 years before. On his death, I removed the bone, and found the edge of the trepan-hole well-marked by a regular depression of above two-thirds of an inch, where the trephine had been applied; while below, the depression was irregular, probably from some splintering having taken place in that direction. The bone which fills up the hole is compact and translucent, except in lower part, where it is thickened, and projects a little internally. The mark is exactly in situation of left frontal eminence, which is destroyed by it, and just above the upper termination of the frontal sinus. This preparation of course settles the question of the complete filling up with bone in the affirmative.

TO THE EDITORS OF THE MEDICO-CHIRURGICAL REVIEW.

Kilmarnock, 20th May, 1840.

Gentlemen,

Never having observed any communications from the West of Scotland in your very widely circulated Journal, I have ventured to trouble you with a very brief sketch of a case, in the hope that it may be the means (if inserted) of stimulating some of my professional brethren, in this neighbourhood, to communicate some of those interesting facts and cases, which are not unfrequently presenting themselves to their notice. This, in my opinion, would not only invest the Medico-Chirurgical Review with a greater degree of interest to readers in this part of this country, but, if duly followed up, would lead to a more careful observation of facts, as well as extend to a wider sphere the benefit of many a long and extensive experience, which would otherwise be entirely lost. By giving the case which here subjoins, a corner in your excellent Journal, (if it seems worthy of that honour,) you will very greatly oblige,

Gentlemen,

Your most obedient servant,

JOHN THORNTON.

Mrs. M'A., æt. 31, the mother of four children, one of which she was still suckling, applied to me on the second day of April last, about what she considered a hernial tumour. She said she observed it first about eight years ago, and it was then no larger than a common garden bean. Since that time it had gone on gradually increasing in size. For the first four or five years it had not given her very great inconvenience, but now it had acquired such a size, as to have become extremely troublesome, preventing her in a great measure from walking or even from sitting with any degree of comfort. On examination,

instead of hernia, I found it to be one of those large adipose tumors, which are not unfrequently found attached to various parts of the body. When handled it felt soft and elastic, but when more firmly pressed, a large hard and knotty body was felt in the interior. Its attachment extended from the symphysis pubis, downward along the whole labium pudendum on the left side as far as the anus. The tumor was quite moveable in all directions, and was evidently connected only with the cellular membrane underneath. When she stood upright it reached within four inches of the knee. It measured 12 inches round the base and eighteen round the apex. When out of bed she always kept it drawn up between the nates, and secured it there by a T bandage. On the 12th April, with the assistance of Dr. Paxton, I excised the tumor, which was contained in a capsule of condensed cellular membrane, and was completely dissected out without much difficulty. The hæmorrhage, which was chiefly venous, was considerable, in consequence of some large veins intersecting the tumor at its base. The urine for the first week was regularly drawn off by the catheter, and the wound, at the end of a month, was all but cicatrised, the patient expressing herself highly gratified at the removal of such a troublesome appendage. The growth, when laid open, appeared to consist entirely of adipose matter, and the hard body which was felt in its interior on firm pressure arose from a condensation of its internal structure.

The necessity for surgeons being minute in every instance with their examinations, is amply attested by the present case; no fewer than three different practitioners having been applied to, each of whom in their turn pronounced it to be hernia. This, in a great measure, may be accounted for, from the backwardness of the patient in allowing a scrutiny of a sufficiently precise nature to be instituted, as well as from the situation of the tumor itself. Had the true nature of the excrescence been properly ascertained at an earlier period of its history, she might have been saved from several years of great and distressing annoyance, as well as much of that pain which she must have endured during an operation for a large instead of a small growth.

A short time ago I assisted in the removal of a tumour of the same adipose structure, from the body of a female. Its base extended from the top of the dorsal vertebræ, over the top of the right shoulder, reaching almost as far round as the sternum. It had been four years in reaching this size, but during the last six months it had made such rapid progress as to have alarmed the patient. Had this case been neglected as the former one, it is impossible to say to what an extent it might have gone, and the difficulties that would have presented themselves in the removal of a tumour with such a wide spread connexion, would of course have become greatly more formidable. A tumour of this description is generally unattended with pain, so that the patient is seldom led to make application about it until it has either begun to create annoyance from its bulk, or to create suspicion from the rapidity of its growth. This certainly is the reason, why so many excrescences are allowed to reach the extraordinary size which many of them are reported to have attained, before being subjected to the salutary influence of the knife. But in all cases where early advice is applied for, the patient ought at once to be made aware of the danger of procrastination, as well as of the safety and necessity of a timely operation. Adipose tumours growing from the labia pudenda seem by no means to be of unfrequent occurrence, and on that account they merit the attention more particularly of provincial surgeons. In the eighteenth volume of the *Medico-Chirurgical Review* two cases are mentioned of a similar nature to the one noticed above. The one was suspended from the nates of a lady, but was found also intimately connected with the labium of the same side. It was removed by Mr. Lawrence, and is said to have been twice the size of that gentleman's head, which is reported to be a good one. The other was also attached to the left labium of a female, and was extirpated by Mr. Earle.

BLOODLETTING IN HYDROCEPHALUS.

(To the Editors of the *Medico-Chirurgical Review*.)

GENTLEMEN,—The notice taken of Dr. Davis' work, in the recent number of your able periodical, shows that there is little novelty in either the pathology, or the therapeutics, of the experienced author. The inflammatory nature of acute hydrocephalus, and the necessity for copious depletion in its early stage, were first clearly demonstrated by the late eminent Dr. Rush, of Philadelphia; and the late Mr. Maxwell, who practised nearly forty years in this district, entertaining similar views, bled even more freely, I believe, than Dr. Rush. But that Dr. Maxwell *cured*, or to speak more philosophically (for the word *cured* is only fit for the advertisement of the charlatan,) that sixty out of ninety cases of hydrocephalus *recovered* under his care, is, I fear, saying too much, and may lead in future, as it has already done in many instances, to irreparable mischief. Dr. Maxwell was what is usually called a bold and decided practitioner—enjoyed great local celebrity,—possessed for a long series of years the unbounded confidence of the public, and was both sanguine and sanguinary in almost every acute disease that came under his notice. He bled freely not only in hydrocephalus, but in every complaint that in any way simulated or approached that dangerous disease.

During the last seven or eight years the lancet has been much seldomer used here, and blood under every circumstance more sparingly and cautiously abstracted. The *recoveries*, I have no hesitation in saying, have been quite as numerous, in proportion to the deaths, as formerly, and more rapid and satisfactory.

It must not be supposed, however, that I object to timely and full bleeding in well-marked cases of inflammatory hydrocephalus; on the contrary, I hold it of the first importance, that blood should be taken early in such cases, and from the jugular vein however young the patient may be.* I am only anxious to caution against returning to the frequent and profuse bleedings of former years.

We all know that there is a fashion in the affairs of medicine, which, like Byron's tide in the affairs of women, "when taken at the full leads God knows where." At the time I settled in Dumfries,—twenty-five years ago,—and for several years afterwards, I was just as sanguine and sanguinary as others, and so enamoured was I with the free way in which the vital fluid was spilt, and the apparent advantage of the practice in almost all cases among children simulating hydrocephalus, that in the summer of 1818 I transmitted you a short paper on the subject, which you did me the favor to publish in the October number of your Journal for that year.

The writings of Hall and Wardrop, on bloodletting, have done much good, and will, I trust, continue to have a salutary influence on the profession.

I am, Gentlemen,

Your very humble Servant

ARCHD. BLACKLOCK,

Late Surgeon R.N.

Dumfries, Oct. 20, 1840.

* In all acute diseases of infants and children when it is thought advisable to make a speedy impression by bleeding, the jugular vein, I think, ought to be preferred; the operation can be easily and safely performed by any person of ordinary adroitness; and the flow of blood may at all times be readily and permanently arrested by passing a fine cambric needle through the edges of the cutaneous orifice, and forming the twisted suture upon it with a common thread. Dr. Maxwell uniformly advised this method of securing the orifice, and often did it himself; for he was not one of those who hesitate to put a hand to when necessity requires.

CASES OF A FATAL WOUND OF THE INTESTINE INFLICTED BY A CLASP-KNIFE OPENING BY GYRATION : OF MASKED AND RAPID PLEURITIS AND PERICARDITIS ; AND ALSO TWO REMARKABLE CASES OF JAUNDICE FROM OCCLUSION OF THE DUCTS, WITH DISTENSION OF THE GALL BLADDER BY A COLOURLESS FLUID DESTITUTE OF BILE : AND OF ULCERATION OF THE RIGHT AND TOTAL DISAPPEARANCE OF THE LEFT KIDNEY : intended to illustrate the conservative efforts of Nature to avert danger, by means of compensating organs and vicarious functions. By Sir David J. H. Dickson, M. D. F. R. S. E. F. L. S. &c. Inspector of Hospitals.

On the afternoon of the 22nd April, 1840, a boat from H. M. S. *Ætna*, after landing ten patients at this hospital, proceeded to the opposite side of the Creek, with three army invalids, also from the North Coast of Spain, for the Military Hospital. While the officer went up with these men, the boat's crew (among whom were George Davis, æt. 21, and William Walker, æt. 20, messmates) amused themselves on the beach "skylarking," as it is termed, wrestling, &c. The latter had been thus engaged with another man, when the former came up behind, and after smearing his face with some dirt, ran off. Walker pursued him, whirling a closed knife attached to a long cord, which he held in his hand : but which, opening by the rapid gyration, (as it afterwards did, when the experiment was tried at the coroner's inquest) the point of the knife struck Davis, and wounded him in the left side of the abdomen, about half-way between the groin and umbilicus. When brought to the hospital, about 5 p. m. the wound, which was in a slanting direction, did not appear to be deep, nor to have penetrated the peritoneum : but, notwithstanding depletory measures, symptoms of intense inflammation supervened, and proceeded with such rapidity, that he died next evening at half past eight o'clock. What adds to the melancholy interest of this catastrophe, is, that although the result of the inquest was "accidental death," and no blame was imputed to Walker, who was considered of a mild, quiet, inoffensive disposition, and rather "soft," than otherwise, yet the death of his messmate so preyed upon the mind of the poor lad (who was a native of Dundee, and naturally rather low spirited) that he fancied he was an object of dislike to the officers and men ; that he could not do any thing to please them, &c. and ultimately, he was sent to the hospital on the 4th of June, in a state of profound melancholia : having twice on that day attempted to commit suicide—in the first instance by strangulation, and afterwards by jumping overboard. By kindness and proper medical treatment, he recovered from this state of mental depression, and was discharged to the *Cambridge*, for which vessel he had expressed a preference ; and I learned a few days afterwards that he was doing his duty like the other men, but I have not heard anything of him subsequently. The above particulars were related to me by Richard Wheeler (who was coxswain of the boat and afterwards a patient in this hospital), and others who witnessed the unfortunate accident : and I shall now only add the report of the dissection of Davis, made by Mr. Weale, my senior assistant, and which was laid before the coroner at the Inquest.

Sectio Cadaveris, 20 hours, p. m.—The body was discoloured by livid blotches. The belly was tympanitic, and blood flowed from the mouth. On the left side of the abdomen there was a cut (evidently made by a sharp instrument) nearly three-quarters of an inch in length, and situated about the middle of a line drawn from Poupart's ligament to the umbilicus, though somewhat external to the latter. A probe could be introduced rather more than an inch into this wound, which ran in an oblique direction downwards and inwards, perforating the centre of the rectus abdominis muscle, and entering the cavity of the abdomen. From this opening some gas was observed to be gradually issuing ; but its obliquity

and consequent valvularity prevented any other fluids from escaping. The epigastric artery lay close to the upper extremity of the wound, and a large branch of that vessel bounded it inferiorly, but both had escaped. The parietal, as well as the intestinal peritoneum was of a mottled, deep red colour, and the convolutions of the intestines were agglutinated by coagulable lymph; while there was a considerable quantity of serum, mixed with fecal matter and gas, in the cavity of the abdomen, which had escaped by an opening in the jejunum, evidently in the direction of the wound; and then, capable of admitting a goose quill. On another knuckle of the bowel there was a deep red spot, probably from having been grazed by the point of the knife. The mucous membrane of the intestines and stomach was not inflamed, but the latter contained some feculent looking fluid. The lungs were much congested; the bronchial lining membrane was of a deep dusky red colour, and the trachea contained semi-coagulated blood.

It is too probable that no treatment would have availed in the present case: and I need not here dwell upon the vast importance of the *earliness* of energetic measures in such instances; in consequence of the incomparably greater rapidity and danger of inflammations of the serous than of the mucous membranes; or of those of the abdomen than of the throat: but as illustrating the occasionally obscure and masked, yet rapid and dangerous character of those of the chest also, I may here adduce the autopsy of two late cases of *pleuritis* and *pericarditis*: in the one who was admitted for "fever," on the 10th, and died on the 18th of July, but in reality with empyema of the left pleura, the effusion, though intolerably offensive and exceeding a gallon in quantity so as to displace the heart to the right side, had speedily taken place; and the compressed lung and all the pleural reflexions were covered with false membrane; large shreds of which also hung from the costal lining, which was gangrenous in several places.

In the other instance, the patient, an officer, had been ill for about a week only, but neglected at first to apply for assistance, and had been so far relieved by depletion as not to be considered in any danger, until the morning when he was admitted into this hospital, moribund; yet in so short a period, the heart and pericardium (which contained at least 24 ounces of puriform fluid, with masses of natant lymph in it) had become so thickly coated with false membrane as to present a reticulated appearance, while the serous membrane beneath was of a deep red colour, from vascular injection.

I shall not here detail the well known processes by which Nature, by the absorption of old and the deposition of new matter, effects the reparation of injuries inflicted by accident or disease in the various structures of the body,—as in the case of fractures—the incarnation of wounds—the prevention or arrest of hæmorrhage, &c. or the wonderful efforts of this conservative power to repair, or limit the mischief which may have been produced by the effusion, and re-absorption of pleuritic and other accumulations of fluid,—the conversion of false membrane—the sprouting of new to compensate for the loss of old vessels—the occasional lining and approximation of tubercular and other cavities—the closing of apoplectic cysts, &c. &c. but will conclude by adducing only two very recent instances, illustrative of the attempts of this ever-busy power—whether partially successful or abortive—to arouse compensating organs to increased action, and thus, by means of vicarious functions or vicarious discharges, as by the exhalants &c., to supply the office, or make up for the deficiencies of such as are impeded or suppressed, in the latter point of view. In the following case in which the occlusion of the duct completely prevented the admission of bile into the gall-bladder, the secretion even to repletion of a colourless ropy fluid like saliva, from its internal surface, and the effusion of blood, and apparently of bile with which the system was loaded, by the intestinal exhalants, are singularly curious and interesting.

John Holmes, S. æt. 52, was admitted with what is vulgarly termed the "black jaundic," on the 14th, and died on the 22nd of July last. He stated that he had never been discoloured before; that he imputed it to having received a blow on the back; and that he had been ill only three weeks, which is incredible, considering the extent of disease afterwards detected. The face and extremities were of a dark mahogany colour; while the body exhibited the extraordinary appearance of purple spots, on a deep yellow ground. The liver was tender, and much indurated; and not only was the urine of the deepest hue, but the ejections from the stomach and bowels, instead of being pale, consisted of a very dark, bloody, offensive matter, which appeared to be a mixture of mucus, blood, and bile, thrown out by the intestinal exhalants: for from the occlusion of the gall ducts, the system was so thoroughly imbued with this fluid, that the white tissues, and even the lining membrane of the arteries were deeply dyed with bile. I need scarcely add that where the portal and hepatic circulation is much obstructed, by what is termed "scirrhus," or other structural disease of this viscus, or of the heart, &c. congestions take place in other organs, which nature attempts to relieve by vicarious discharges. Hence, as in a late instance, we occasionally meet with melæna, or other profuse evacuations, *supra infraque*, where no evidence of disease of the mucous surface can be detected—and more frequently with serous or sanguineous effusions, in the shape of dropsy, or hæmorrhage from the stomach, bowels, lungs, nostrils, &c. The extent of such obstruction is strongly portrayed in the following dissection of Holmes, ten hours p.m.

The abdomen contained a small quantity of yellow serum. The liver was thickly studded with large tubera, especially its concave surface, though it was tuberculated throughout;—but its colour was lighter, and its situation better defined than in health:—the paler tissue forming a yellowish olive ground, which rendered the vascular parts more distinct. On cutting it, no blood escaped, but a clear, oily-looking fluid of the consistence of synovia, flowed in considerable quantity from the incised surfaces.

The gall bladder was enormously distended by a perfectly colourless, but somewhat ropy fluid, like saliva; but destitute of any appearance of bile whatever; and the cystic and hepatic ducts were completely obliterated and lost in a scirrhus, pancreatic-looking mass, deposited between the layers of the lesser omentum; and involving the great end of the pancreas, which did not seem to be further diseased:—its duct being pervious to within an inch of its extremity. The hepatic vessels, vena cava, aorta, and the upper third of the duodenum were inseparably accreted together by this morbid deposit, which surrounded the aorta as far as the superior mesenteric artery: and must have caused considerable obstruction of the inferior vena cava.

The portal system was unusually bloodless. The stomach and upper part of the intestines contained a great quantity of a dark offensive fluid, resembling a mixture of bile-grumous blood and matter; and the mucous surface had an ecchymosed appearance.

The spleen was healthy, the kidneys were large;—internally of a yellowish-olive colour; and a bilious looking fluid exuded so freely on section, that they seemed as if they had been soaked in bile; and as already noticed, all the white tissues, and even the lining membrane of the arteries, were deeply tinged with this fluid.

The last which I shall mention was also a very extraordinary case of ulceration of the right, and the absence or total disappearance of the parenchyma of the left kidney; which, whether resulting from original vice of conformation, or which is more probable, absorption from disease, is rendered still more remarkable by the statement of the surgeon that the man, a quarter-master, from the Vanguard, at Portsmouth, had been actively employed in raising volunteers

at Devonport, and had been taken ill only three days previously to his admission into the hospital.

Isaac Abrahams, æt. 43, was received with symptoms of gastro-enteric, and renal disease, on the 14th, and after laying some days in a semi-comatose or delirious state, latterly with suppression of urine, and copious perspirations of a strongly urinous, ammoniacal smell, died on the 23d July, 1840.

Sectio cadaveris, 35 hours p.m. The vessels on the surface of the cerebrum were tinged with blood; and the arachnoid membrane was raised by a copious effusion of serum, emitting an odour like new-made hay. The substance of the brain was firm, and presented on section a quick succession of numerous bloody points; but no fluid was found in the ventricles at its base, nor in the spinal canal.

The contents of the thorax, as in the preceding case, and also of the abdomen, appeared to be nearly normal; with the exception of a large oblong fluctuating tumor, which at once attracted attention, in the left hypochondrium. It projected beyond the colon, which it pushed backwards and towards the side. The supra-renal capsule was attached to its superior extremity. The renal vessels entered it about one-third lower;—and about two inches and a half below this the ureter issued between its coats obliquely upwards, and then turned downward in the usual direction, and of the natural size. Upon being removed this tumor measured about sixteen inches round, and twenty-three inches in its oblong circumference. It was covered partially by the peritoneum, and entirely by the usual fibrous coat; between which and the internal mucous surface a considerable number of large blood-vessels ramified. It was completely distended by a perfectly limpid inodorous fluid, like water, which on puncturing it, escaped.

The parenchymatous, and indeed the whole structure of the kidney, had entirely disappeared; though some faint traces of the papillæ were still visible. The mouth of the ureter was perfectly distinct, and the opening permitted the introduction of a probe for more than an inch, while the obliquity of its passage through the coats, impeded its further progress,—and acting as a valve, for the same reason prevented the fluid collected in this large sac from descending into the bladder: for otherwise the canal seemed to be permeable throughout. The right kidney, having a compensative or double duty to perform, was enlarged, and the infundibula and the commencement of the ureter for some inches were dilated; while the coats of the latter were also thickened, so that it measured about the size of the thumb in circumference. The substance of the kidney had evidently suffered from recent inflammation, and was thickly studded with bloody points. Its pelvis, which was distended with brownish turbid urine, was covered with ash-coloured false membrane; which was partially detached, and exposed a raw and ulcerated surface beneath, extending into the ureter; which, as already noticed, was dilated, but became gradually narrower, until it exhibited the usual size and appearance, within five inches of the bladder. The latter organ was much contracted in size, but apparently in a healthy condition.

DAVID J. H. DICKSON.

Royal Naval Hospital, Plymouth,
1st September, 1840.

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Erratum.—By some strange mistake, the name of Wells was substituted for Walshe, in our notice of the article "Cancer," in the Cyclopædia of Practical Surgery. Dr. Walshe, of Camden Town, is the author of the article in question.





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